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Office of Information and Technology

IT Program Management Guide

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INFORMATION TECHNOLOGY PROGRAM MANAGEMENT

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CHAPTER 1. OVERVIEW OF IT PROGRAM MANAGEMENT AT VA

1. Purpose. These guidelines contain mandatory procedures for the management of all Information Technology (IT) programs and operational systems designated as major IT investments. (Note: Although the procedures in this document are mandatory only for major IT investments, in many instances, managers of non-major IT investments can realize benefits by implementing some or all of the procedures. Managers of non-major IT investments are encouraged to consider their investments' complexity and level of risk, review the procedures in this document, and then implement a scaled application of the document's procedures.)

2. Fundamental Terminology. VA uses project and program management terminology from the Project Management Institute (PMI®), the Office of Management and Budget (OMB), and the Department of Defense (DoD) to standardize and improve communication within the organization with regard to IT program management. Note on terminology: Throughout this document, the term "Program Manager" is abbreviated as "PM".

a. **Control Account (CA).** The CA is a managerially significant subset of a project, where planned and actual direct labor, material, and other direct costs are compared with earned budget for management control purposes. The CA is defined as the intersection of the work breakdown structure (WBS) and the organization breakdown structure (OBS). This point is where scope, budget, actual cost, and schedule are integrated and can be compared to earned value for performance measurement.

b. **System Development Life Cycle.** The system development life cycle is a collection of generally sequential phases. The phases are made up of logically related activities that typically result in a deliverable. All programs must have clearly defined system development life cycles. There are different types of system development life cycles available to accommodate different types of programs. There is not a single best way to define an ideal life cycle. The PM must choose a system development life cycle that is appropriate for the particular program being managed and Senior Leadership must approve this choice.

c. **Information Technology.**

(1) Information Technology (IT) is defined by the Clinger-Cohen Act of 1996 (sections 5002, 5141, and 5142). IT refers to any equipment or interconnected system or subsystem of equipment used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange transmission, or reception of data or information. Equipment is "used" by an agency whether the agency uses the equipment directly or it is used by a contractor under a contract with the agency that requires the use of such equipment in the performance of a service or the furnishing of a product. IT includes computers, ancillary equipment, software, firmware, and similar procedures, services, and related resources. IT does not include any equipment acquired by a Federal contractor incidental to a Federal contract.

(2) VA supplements the Clinger-Cohen Act definition for Information Technology in a memorandum jointly issued by the Assistant Secretary for Management and the Assistant Secretary for Information and Technology. The subject of the memorandum is "Use of the Information Technology Systems Appropriation".

d. **Information Technology (IT) Investment.** Projects, programs, and operational systems that incorporate IT are referred to as "IT Investments". An IT Investment is the decision by Senior Leadership to expend resources or the actual expenditure of resources on selected IT or IT-related initiatives with the expectation that the benefits from the expenditure exceed the value of the resources expended. VA broadly classifies IT investments as major and non-major.

(1) **Major IT Investment.** A major IT investment refers to a program or an operational system that meets at least one of the following criteria:

(a) New initiatives with $1M in total development costs;

(b) New initiatives with development duration of one year or greater;

(c) $10M in acquisition costs or $30M in lifecycle costs;

(d) Annual obligations of $0.5M or more for financial systems;

(e) High executive visibility; or

(f) Significant importance to the mission or function of the agency.

(2) Each year, approximately half way through the fiscal year (March), the Chief Information Officer (CIO) releases an IT Budget Materials Call that includes more specific criteria for differentiating between types of IT investments (major versus non-major).

(3) For all major IT investments, the PM must complete and submit an OMB Exhibit 300, Capital Asset Plan and Business Case to the Office of IT Enterprise Strategy, Policy, Plans, and Programs (SPP).

e. **Non-major IT Investment.** A non-major IT Investment is any IT project or operational system that is not considered a major IT Investment (as defined above).

f. **Operational System.** An operational system is an IT investment or a portion of an IT investment that has been delivered and is performing its intended mission. Operational systems are often referred to as "steady state" investments. Operational systems are <u>not</u> considered projects.

g. **Portfolio.** A portfolio is a collection of VA investments. A portfolio arranges investments in a manner that enables Senior Leadership to ensure that they are expending their finite resources only on those investments that align with and support the goals and objectives laid out in the VA Strategic Plan and other appropriate Federal policies.

h. **Program.** A program is a group of related projects managed in a coordinated manner to obtain benefits and control not available if they were managed individually. At VA, the term "program" refers to a major IT investment that is progressing through a development life cycle.

i. **Program Management.** The centralized coordinated management of a program to achieve the program's strategic objectives and benefits.

j. **Project.** A project, as defined by the Project Management Institute, is a temporary endeavor undertaken to create a unique product, service, or result.

(1) A project exists when:

(a) Senior Leadership makes the decision to address a specific business need.

(b) Senior Leadership allocates funding for it.

(c) Measurable goals and objectives are well defined, that is, goals and objectives can be translated into cost, schedule, and performance metrics.

(2) At VA, an individual "project" should not be referred to as a major IT investment. If an individual "project" meets the criteria of a major IT investment and/or Senior Leadership declares it to be a major IT investment, then the effort should be referred to as a "program".

k. **Project Management.** Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management involves identifying requirements, establishing clear and realistic objectives, balancing competing demands, and flexibility.

l. **Senior Leadership.** Senior Leadership refers to the individuals and/or groups that have a business relationship or responsibility for IT investment management processes. Senior Leadership responsibilities include policy making, project prioritization, decision making, budgetary control, requirements management, project execution, and ensuring proper accountability of IT investments.

3. Information Technology System Development Life Cycle Framework. The IT System Development Life Cycle (SDLC) Framework is a model that VA uses to manage major IT investments throughout their life cycles (concept through disposal). The framework offers stakeholders a systematic (linear) way of viewing major IT investments at intervals (phases). More importantly, the framework enables Senior Leadership to evaluate major IT investments and make critical funding decisions about them through the use of a Milestone Review process.

a. **Flexibility of the IT SDLC Framework**.

(1) The framework is designed to be rigid enough to ensure that Senior Leadership has adequate control and oversight, yet flexible enough to accommodate the various development life cycles used.

(2) The framework can be tailored, if necessary, to better satisfy the particular needs of a major IT investment. If a PM decides that it is necessary to tailor the framework (or any other requirement identified in this document), they must receive approval from the Planning, Architecture, Technology and Services (PATS) Board prior to doing so.

b. **Milestone Reviews.** The IT SDLC Framework is structured into discrete, logical steps separated by major decision points referred to as milestones. The milestone marks the end of a phase and a critical decision point. When a program approaches a

milestone, the Project Manager must present a briefing to the Planning, Architecture, Technology and Services (PATS) Board and undergo a competency assessment review before the program can progress to the next phase. Milestone Reviews provide a basis for comprehensive management, progressive decision-making, and authorization of funding for each phase of the IT SDLC Framework. The content of the Milestone Review Briefing depends on the milestone phase that the program is completing. There are five milestones (0 – 4) in the IT SDLC Framework and five corresponding Milestone Review Briefings. Competency assessment review teams will collaborate with Project teams on the review. Competency assessment areas include: business alignment, data compliance, technical compliance, enterprise architecture alignment, security and privacy compliance, and program management.

(1) **Milestone 0 Review: Concept Definition Approval for Requirements Development.** At Milestone 0, the Business Sponsor must address the basic areas necessary to warrant approval for requirements development and authorization to expend the funds necessary to establish the program's business case.

(2) **Milestone 1 Review: Requirements Approval for Design.** At Milestone 1, the PM must address areas necessary to warrant Senior Leadership's approval of resources for continuing the project into the design effort. At Milestone 1, the PM and Business Sponsor must demonstrate a well-founded business case for the effort and a complete set of requirements.

(3) **Milestone 2 Review: System Design Approval for Development.** At Milestone 2, the PM must provide a completed design to warrant approval to develop and test the system/subsystem. In addition to the completed design, the PM will provide the results of the prototype (if any) and request permission to move into development and testing.

(4) **Milestone 3 Review: System Development Approval for Deployment.** At Milestone 3, the PM must address areas necessary to warrant approval to deploy the system/subsystem. Key issues to be addressed are whether the program has successfully demonstrated (through user acceptance testing) that functional and performance requirements were met.

(5) **Milestone 4 Review: Deployment Approval for Transfer to Operations.** At Milestone 4, the PM requests approval to transfer authority to the Operations Manager. This Milestone marks the official end of development efforts and the beginning of steady-state operations. After the initial Milestone 4 review, subsequent reviews are conducted, such as Post-Implementation and Operational Analysis reviews.

c. **Linear Development Life Cycles and the IT SDLC Framework.** Life cycles that are linear are commonly referred to as "waterfall" or "cascading". The phases in a linear development life cycle occur sequentially until completion (see Figure B-1). This type of development life cycle correlates well with the IT SDLC Framework since both of them are linear. If the PM selects a linear development life cycle with more than the six phases presented in Figure B-1 ("Concept Definition" through "Operation"), the PM must document how s/he will align the program with the IT SDLC Framework and present it to PATS Board during the Milestone 1 Review for approval. The PM should consider the following when aligning program phases and IT SDLC Framework phases.

(1) The PM has the option of combining development phases so that they fit into one IT SDLC Framework phase. For example, if the development life cycle has a "development" phase and an "integration and test" phase, the PM could fit them into the "System Development and Testing" IT SDLC Framework phase (Phase 3).

(2) The PM has the option of adding additional Milestone Reviews. For example, if the PM chooses a development life cycle that has nine phases, s/he can plan for a Milestone Review to occur between each of them.

(3) All programs are different and therefore it is up to the Business Sponsor, the Office of Enterprise Development (primarily through the PM), and the PATS Board to agree on an appropriate solution that serves the best interests of the Department.

(4) For planning purposes, the PM should strive to make the time between milestone briefings no less than six months and no more than one year.

d. **Iterative Development Life Cycles and the IT SDLC Framework.** Iterative or spiral development life cycles are linear in the fact that they have a defined starting point (Concept Definition) and a defined ending point (Final Deployment); to get from start to finish, these programs must pass through several "design-develop-test-deploy" iterations (see Figures B-2 (Iterative) and B-3 (Spiral).

(1) In order to align iterative development life cycles with the linear IT SDLC Framework, the PM must consider the total number of expected iterations (during the early portions of the program life cycle, this will likely be an estimate), the nature of the iterations (time, cost, and complexity), and the expected outcome of each iteration (small scale deployment, component deployment, or exploratory/fact finding).

(2) Since iterations vary in terms of time, cost, complexity, risk, and overall importance, there is no prescribed manner by which the PM must assign IT SDLC Framework Milestone Reviews. The PM should consider the following when planning Milestone Reviews for iterative development life cycles.

(a) The PM has the option of requesting a Milestone Review after one complete "design-develop-test-deploy" iteration.

(b) If a particular iteration will be long (generally, greater than one year), high-risk, and/or extremely critical to the success of the overall program, the PM can opt for multiple Milestone Reviews within the "design-develop-test-deploy" iteration. For example, Milestone Reviews can be held after each of the "Design and Prototype", "Develop and Test", and "Deploy" portions of the iteration.

(c) If iterations are short and less risky, the PM can present Milestone Reviews that address multiple development iterations.

CHAPTER 2. ROLES AND RESPONSIBILITIES

1. Roles and Responsibilities. This chapter presents the key roles and responsibilities for the program management functions and requirements defined in this document. The PM is the critical person charged with overseeing the development efforts of major IT investments; however, there are many other individuals and groups that perform important functions and provide support and oversight throughout a major IT investment's life cycle. VA considers all personnel associated with programs to be stakeholders and further separates these stakeholders into three general categories—the Integrated Project/Product Team (IPT), Business Sponsors and Customers, and Senior Leadership. The following paragraphs define the roles and responsibilities of the individuals and groups involved in IT program management.

2. Integrated Project/Product Team (IPT). The IPT is a multi-disciplinary team, selected and led by the Program Manager or Operations Manager (depending on the phase of the major IT investment). During development efforts, the IPT is referred to as the Integrated *Project* Team. Once the major IT investment becomes operational, the IPT becomes an Integrated *Product* Team. In all instances, the IPT is responsible and accountable for planning, budgeting, procurement, and life-cycle management of the major IT investment to achieve cost, schedule, and performance goals. The IPT will vary in size and disciplines depending on the phase of the major IT investment, and it must always include a VA Level III certified PM and Contracting Officer. IPTs are required for major IT investments and recommended for all other IT investments. It is common for an IPT member to serve as the technical subject matter expert for more than one program. Most IPT members' service on an IPT is part time and the workload will fluctuate based upon the life cycle phase.

a. The IPT should consist of individuals with the following skills:

(1) Budgetary

(2) Financial

(3) Capital Planning

(4) Procurement

(5) User

(6) Program

(7) Architecture

(8) Earned Value Management

(9) Operational Analysis

(10) Information Security

(11) Systems Engineering

(12) Other skills as appropriate

b. Specific members of the IPT include the following.

(1) **Program Manager (PM).** The PM is the leader of the IPT during development efforts. S/he is responsible for managing a collection of related projects, that when combined, constitute a program. S/he is formally assigned by the Office of Enterprise Development and reports to that Office during all development efforts. S/he is responsible for managing any Project Managers assigned to the particular program. The PM must perform the general functions listed below:

(a) Plan, organize, staff, direct, control and coordinate the program.

(b) Schedule and facilitate meetings with the IPT and other individuals and groups associated with the program.

(c) Recommend composition of the program team.

(d) Lead and guide the program.

(e) Account for program cost, schedule, quality, and scope.

(f) Ensure program maps to and supports Federal Enterprise Architecture (FEA) and VA Enterprise Architecture.

(g) Reward and recognize performance.

(h) Resolve any outstanding issues among the Program/Project Teams that cannot be resolved within the team.

(i) Coordinate with Senior Leadership, Business Sponsor, and subordinate project managers to provide overall resource allocation to the projects that make up the program.

(j) Maintain ongoing communication with subordinate project managers.

(k) Communicate program status to Senior Leadership.

(l) Ensure that the program meets IT security certification and accreditation (C&A) requirements by integrating security activities throughout the development life cycle.

(m) Ensure that the program meets Section 508 accessibility requirements in accordance with Directive 6221, *Accessible Electronic and Information Technology*, and its accompanying handbook.

(n) Develop and present required program status briefings and reports; participate in reviews including, but not limited to, Integrated Baseline Reviews (IBRs), Program Management Reviews (PMRs), Technical Reviews, Post-Implementation Reviews (PIRs), and Milestone Reviews.

(o) Determine needs for contracted services and supplies; provide necessary inputs to contracting staff to let contracts; review contract deliverables.

(2) **Project Manager.** The Project Manager is responsible for managing a particular project. S/he is charged with completing the project on time, within budget, and at designated quality standards. The Project Manager is responsible for accomplishment of the general functions listed below:

(a) Schedule and facilitate meetings with the project team and other individuals and groups associated with the project.

(b) Solicit input from the project team and incorporate it, as appropriate, into project plans and deliverables.

(c) Manage project scope, schedule, and cost.

(d) Comprehend and implement organizational project policies and procedures.

(e) Ensure the project maps to and supports the Federal Enterprise Architecture (FEA) and VA Enterprise Architecture.

(f) Establish and maintain project quality.

(g) Determine needs for contracted services and supplies; provide necessary inputs to Contracting staff to let contracts; and review contract deliverables.

(h) Identify and acquire project infrastructure needs such as Primavera® system application training, accounts, and licenses, as necessary.

(i) Ensure that the project meets Section 508 accessibility requirements in accordance with Directive 6221, *Accessible and Electronic and Information Technology*, and its accompanying handbook.

(j) Define project goals, objectives, and success criteria.

(k) Assist during the identification of project requirements and acceptance criteria.

(l) Develop a requirements traceability document.

(m) Identify, document, monitor, and control risks.

(n) Identify assumptions, and constraints.

(o) Develop Project, Risk, Quality, Change, and Communications Management Plans and update them as necessary.

(p) Develop Test and Evaluation Master Plan.

(q) Monitor the completion of project deliverables based on internal and external customers' requirements.

(r) Conduct Privacy Impact Assessment (if required).

(s) Ensure that IT security activities and C&A requirements are integrated throughout the development life cycle.

(t) Collect "Lessons Learned" throughout the life cycle.

(u) Identify and secure project team resources.

(v) Serve as focal point for project communications.

(w) Develop and present required project status briefings and reports; participate in reviews including, but not limited to, Integrated Baseline Reviews (IBRs), Program Management Reviews (PMRs), Technical Reviews, Post-Implementation Reviews (PIRs), and Milestone Reviews.

(3) **Operations Manager.** The Operations Manager performs the ongoing management and execution of repetitive activities or processes. The Operations Manager officially takes over control from the PM after the major IT investment

transitions from development to operations (steady state). The Operations Manager is assigned to the investment during Phase 4 from the Office of Enterprise Operations and Infrastructure.

(4) **Contracting Officer (CO).** The Contracting Officer is a VA official who is authorized to enter into, administer, and terminate contracts on behalf of the Department. The Contracting Officer is responsible for ensuring performance of all necessary actions for effective contracting, ensuring compliance with the terms of the contract, and safeguarding the interests of VA and the United States in its contractual relationships. The Contracting Officer is responsible for ensuring appropriate contract clauses (Earned Value Management System, Integrated Baseline Review, and others) are included in the contract.

(5) **Contracting Officer's Technical Representative (COTR).** The COTR is an authorized representative of the Contracting Officer, who operates within the limits of authority as delegated in writing by the Contracting Officer. The COTR works with the Contracting Officer to ensure that the contracting process is successful. The principal role of the COTR is to furnish technical direction and monitor contract performance. The COTR must maintain a relationship with the contractor such that both parties involved are entirely independent of each other (this is commonly referred to as an "arm's length" relationship). The COTR helps to ensure that contractors get paid for only those services and materials authorized. The COTR plays an important role during the review, acceptance, and rejection of contract deliverables. COTRs are usually nominated by the requirements generating organization, but are always designated, in writing, by the Contracting Officer. The COTR may not re-delegate authority received from the Contracting Officer.

(6) **Control Account Manager (CAM).** The CAM is the single point of contact for the management of the Control Account. The CAM is responsible for managing the cost, schedule, and technical performance of the Control Account. Additionally, the CAM must define deliverables and plan the work required to achieve the deliverables; manage assigned resources; and analyze earned value and other performance information. More detailed guidance can be found in the VA EVMS Application Guide.

(7) **Planner.** Under the guidance of the Program Manager or Project Manager, depending on where the planner is assigned, the Planner is responsible for building critical path project schedules, establishing proper relationships between activities, entering estimates of activity durations, assigning activity and resource calendars, entering activity and project coding, assigning constraints, and calculating schedule. This position should be assigned as early as possible in the development life cycle. The Planner must use Primavera® to complete all scheduling activities and must adhere to all procedures outlined in the Primavera® Standard Operating Procedures (see Chapter 9 for more information on Primavera®). (Note: The Planner role can be filled by any member of the IPT. The Planner does not have to be engaged full-time in planning responsibilities.) The Project Planner must perform the general functions listed below:

(a) Build and maintain a project schedule using Primavera®.

(b) Collect schedule and cost status information and update the schedule at least monthly.

(c) Produce summary and detailed reports in accordance with guidance from the PM and other stakeholders.

(d) Track completion of deliverables and alert PM of potential delays.

(e) Develop trend analysis, earned value management, variance analysis, risk assessments, and business modeling to identify issues and provide guidance and recommendations.

(f) Arrange scheduling meetings as required and report on a regular basis.

(g) Analyze anticipated or actual schedule and cost delays and propose recommendations.

3. Business Sponsors and Customers. The Business Sponsors and customers work closely with the IPT to ensure program success.

a. **Business Sponsors.** The Business Sponsor will usually be the sole or primary recipient of the program's end result (the product or process). There is no standardized method that VA uses to identify the Business Sponsor; however, the Executive Director(s) of Business Requirements and Business Needs and Investment (BNI) Board are responsible for ensuring a Business Sponsor is identified. The Business Sponsor should perform the general functions listed below:

(1) Articulate business requirements.

(2) Approve the program requirements document.

(3) Develop Charter (at VA, the Charter consists of the Concept Paper, the Milestone 0 Briefing, and an approved Milestone 0 Decision Memorandum).

(4) Validate that requirements are met during test and evaluation and other user acceptance testing.

(5) Serve as final VA approval for Operational and Acceptance Testing.

(6) Review all changes to requirements, scope, cost, and or schedule during the program's life cycle.

(7) Coordinate with Senior Leadership and the PM to acquire the necessary non-IT resources.

(8) Champion the program to increase exposure and encourage buy-in.

(9) Communicate progress and success factors to the IPT and other stakeholders.

b. **Customers.** The customer is the person, group, or organization that will use the product or process after development, testing, and deployment is complete. The customer is responsible for communicating needs and verifying that requirements are satisfied. The customer can be internal, external, or both. The Customer performs the general functions listed below:

(1) Articulate and document requirements, key performance parameters, use cases, and concepts of operations.

(2) Participate in contract selection deliberations.

(3) Validate that requirements are met during test and evaluation and other user acceptance testing.

(4) Support and conduct staff training programs as required to make certain that the staff is ready to accept the new product or process.

(5) Participates in user acceptance testing.

4. Senior Leadership. Senior Leadership (defined previously in this chapter) includes the following boards and offices.

a. **IT Governance Boards.** The IT Governance Boards are described in this section. Additional information about these boards can be found in the VA IT Governance Plan.

(1) **Strategic Management Council (SMC).** The SMC is the strategic, priority setting, oversight, and issue resolution board for IT matters within VA. The SMC serves as the direct link between the IT Governance Framework and the overarching VA Governance Framework (each of these frameworks is described in the VA IT Governance Plan). The SMC is responsible for ensuring alignment between VA's business objectives and IT strategy. The SMC is chaired by the Deputy Secretary and it meets at least quarterly.

(2) **IT Leadership Board (ITLB).** The ITLB is the VA-wide IT Governance Board. The ITLB addresses all information resource management areas to include strategy, programs, projects, and services. The ITLB is chaired by the Assistant Secretary for Information Technology (CIO) and board members include key executive-level leaders from the Administrations, Staff Offices, and OI&T. The objectives of the ITLB are to set VA-wide information, security, and technology direction, based upon business requirements and technology evolution; ensure the VA IT Strategic Plan supports the goals and the objectives of the VA Strategic Plan; approve and enforce IT policies; protect information and data; recommend and manage IT infrastructure investments; and monitor the performance of the IT services. The ITLB provides business recourse for issues unresolved by lower level boards.

(3) **Business Needs and Investment (BNI) Board.** The BNI Board is the VA-wide IT governance board that addresses IT services and solution development activities. The BNI is chaired by the Principle Deputy Assistant Secretary (PDAS) of OI&T and board members include senior executives representing the Administrations and Staff Offices, resource management officers, and selected IT service managers. The board will meet at least monthly and their objective is to identify, review, recommend, and advocate IT projects/programs across the department; monitor and align IT business solutions; and optimize IT resources. The BNI will enforce the use of enterprise architecture as the key planning tool for documenting and analyzing new functional requirements.

(4) **Planning, Architecture, Technology, and Services (PATS) Board.** The PATS Board is the VA-wide governance board that oversees the program management and technical performance of IT service delivery, and development the of the IT appropriation multi-year program. It is chaired by the Deputy Assistant Secretary for IT Enterprise Strategy, Policy, Plans, and Programs (SPP) and board members include

senior executives representing the business requirements of the Administrations and Staff Offices, Enterprise Architect, Systems Engineer, and selected IT service managers. The PATS Board objectives are to formulate and enforce VA Enterprise Architecture; oversee the creation of the VA IT Strategic Plan and service level agreements; and ensure the performance requirements of these agreements are met. The PATS Board recommends the overall departmental priorities for IT related business solutions; defines IT service offerings, infrastructure and technology standards; and assures standardization, interoperability, security, reliability, and flexibility of the technology infrastructure. For programs that are performing out of established parameters including budget and scope, the PATS Board forwards a formal decision recommendation to Senior Leadership.

(a) The PATS Board Secretariat, staffed in SPP, coordinates and facilitates the program manager's inputs to the Milestone and other Reviews, Competency Assessment Review Team's findings, and the Milestone Review meetings, minutes, and decisions memos.

(b) **The Competency Assessment Review (CAR) Team** – The Pre-Milestone Review CAR Team is composed of representatives from within each OI&T Deputy Assistant Secretaries' Office. Typically, a CAR Team is assigned at the Pre-Milestone 0 review and each subsequent review in the life of the individual project/program. The CAR Team is responsible for reviewing and assessing the project/program documentation related to their specialty area. Their findings and recommendations are forwarded to the PATS Secretariat with feedback to the project team.

b. **Offices.**

(1) **Office of the Assistant Secretary for Information and Technology (AS/IT) and Principle Deputy Assistant Secretary (PDAS/IT) (VA CIO and Deputy CIO).** This Office is headed by the VA Chief Information Officer (CIO) and the Deputy CIO. Together they provide technical direction and guidance to ensure that the information technology is developed, acquired, implemented, and managed per the policies and procedures outlined in the Clinger-Cohen Act, the VA Strategic Plan, and the priorities established by the Secretary. The office oversees the management of VA's Enterprise Architecture; Cyber-Security; VA IT capital planning, executing, and financial management programs; IT project management oversight; the Department's data processing centers; wide area data and local area network management; telecommunications (voice, video, and data) program management; records management; E-Government; office automation support services; and IT development, implementation, operational and maintenance support for all VA.

(2) **Office of the Deputy Assistant Secretary for IT Enterprise Strategy, Policy, Plans and Programs (SPP).** This office, through its Deputy Assistant Secretary, advises and assists the AS/IT and PDAS/IT in overseeing and directing the areas of IT strategic planning, business relationship management, enterprise architecture, IT portfolio management, research and innovation, program management, and quality and performance management. This office has the subject matter expertise in policy and planning and coordinates the VA-wide implementation of IT legislation, initiatives, and guidance. This office serves as the primary point of contact with the Office of

Management and Budget (OMB) and for the consolidation of performance metrics related to the President's Management Agenda (PMA). This office provides direction in developing, implementing, and maintaining policies, procedures, and standards related to IT practices and strategic plans that result in the effective use and investment in IT across VA. They play a key role in working with the business offices to build a thorough understanding of the nature of the business problems as well as the products and solutions that provide value in solving those problems. The office develops short and long term plans to address specific business needs and issues and to realize VA information technology goals and objectives.

(3) **Office of Enterprise Development.** This office, through its Deputy Assistant Secretary, serves as the chief advisor to the CIO for all enterprise application development activities. It provides the day to day oversight and direction to all development solutions developed by OI&T for the business units. This office ensures that user requirements are appropriately captured and that functional and technical solutions are developed in accordance with guidelines established by OI&T. Further, the office ensures that appropriate levels of testing are conducted and that all IT is validated and assessed for quality. This office works closely with other IT leaders to ensure proper planning for all solutions development and support occurs in a timely manner.

(4) **Office of Enterprise Operations and Infrastructure.** This office, through its Deputy Assistant Secretary, directs all operational activities associated with VA's IT environment. This includes the following activities: providing help desk support, network management, and telecommunications management; conducting production monitoring for all IT production services; managing delivery of operations services to all VA geographic locations; managing availability of data center systems; conducting data center facility management; and conducting all user administration activities for both infrastructure and applications.

c. **Other Senior Leadership.** The following individuals and groups are not official governance boards, but they do play an important role in the investment management process.

(1) **Business Advisory Committee (BAC).** The Business Advisory Committee is a non-governance board that provides business unit feedback to the ITLB regarding overall IT performance. The BAC is primarily focused on advising the ITLB on user acceptance testing and training within the scope of IT projects/programs. The BAC serves as an advisory body to the ITLB and does not have any decision making authority.

(2) **Executive Directors of Business Requirements.** There are four Executive Directors of Business Requirements—one for each administration and one for the staff offices. These directors are responsible for capturing, classifying, qualifying, advocating, and maintaining requirements for their business as related to IT services. They work with OI&T to formalize and prioritize business requirements for development or implementation of business applications and services; negotiate, on behalf of the Administration or Staff Office, the required IT capabilities, components and services; and establish the business acceptance criteria, terms, and conditions.

CHAPTER 3. CONCEPT DEFINITION (PHASE 0)

1. Purpose. The purpose of the Concept Definition Phase is to systematically identify research, and validate business requirements (concepts) within VA. At the end of this phase, the Planning, Architecture, Technology, and Services (PATS) Board will review and consider approval to "charter" these concepts for more intense planning, allocate funding, and authorize the concept to progress to the next phase of the IT SDLC Framework. During this phase, the Business Sponsor is responsible for researching the concept and generating evidence to justify it. Ultimately, the Business Sponsor's fact finding activities will be used to generate documents, upon which the PATS Board will decide whether or not to approve the concept for further development.

2. Entry Criteria. The process outlined in this chapter relies upon two assumptions. The first assumption is that the procedure that elevates business requirements from the Executive Director of Business Requirements to the BNI and PATS Boards is functioning properly. In other words, the BNI and PATS Boards are receiving business requirements from the Administrations and Staff Offices and they are analyzing and prioritizing them. The second assumption is that the BNI Board, PATS Board, and Executive Directors of Business Requirements have formally assigned a Business Sponsor (VA full time employee) to champion the concept.

3. Process.

a. During the Concept Definition phase, the Business Sponsor looks at business requirements, conducts research and investigates solutions using sound business techniques. The Business Sponsor should identify stakeholders and solicit input from them during this effort.

b. When the Business Sponsor completes the investigation, s/he summarizes the findings in a Concept Paper. The Concept Paper provides a description of the business need (the business requirement(s)), risk-adjusted life cycle cost estimates for each of the identified alternatives, and high-level justification of the proposed solution. Effective Concept Papers clearly show how the proposed solution aligns with objectives presented in the VA Strategic Plan and VA IT Strategic Plan. The Concept Paper must be completed electronically using the Capital Asset Management System (CAMS). The template for the Concept Paper, CAMS access information, and other information can be found on the CAMS website.

(1) The Milestone 0 Review briefing slides present the business impact, assumptions, constraints, risk, and preliminary cost and schedule information.

c. The Business Sponsor and the Office of Enterprise Development collaborate and select a PM. Early identification of a PM is important during the preliminary planning processes. If a PM cannot be identified during this phase, the Business Sponsor and the Office of Enterprise Development must create a short list of viable candidates. (Note: Developmental Systems designated as major IT investments must be managed by a VA employee with a VA Level III PM certification. The certification process is governed by the One VA IT Project Management Certification Board.)

d. The Business Sponsor and/or PM submit the Concept Paper to the PATS Board Secretariat in accordance with information provided in the Concept Paper Data Call memorandum.

e. The CAR Team conducts a Competency Assessment Review of the Concept Paper and provides feedback to the Business Sponsor and findings to the PATS Secretariat. The Secretariat schedules the milestone review.

f. The Business Sponsor and/or PM present the Milestone 0 Briefing to the PATS Board. The PATS Board renders their decision and any conditions and constraints in the form of a Milestone Decision Memorandum.

4. Competency Assessment Review Considerations.

a. **Enterprise Architecture Alignment.** The Business Sponsor/PM must contact the Enterprise Architecture (EA) Office and request the assistance of an enterprise architect. The enterprise architect becomes a member of the IPT and will assist with the technical aspects of Concept Definition. The Business Sponsor and the enterprise architect will address the following considerations:

(1) How will the proposed system align with the Federal Enterprise Architecture (FEA)?

(2) Dependencies and Interrelationships. How will the proposed system fit into VA's current enterprise architecture and the "to-be" enterprise architecture?

(3) What measurable service improvements and efficiency improvements will result from the proposed system?

b. **IT Security Considerations.**

(1) In accordance with the Federal Information Security Management Act (FISMA), all major IT investments must undergo certification and accreditation (C&A) in accordance with NIST SP 800-37 before they become operational. The C&A process must be started early in the development life cycle to ensure that the system will have "Authority to Operate" (ATO) once it progresses into Phase 5 (System Operation).

(2) The Information Security Officer, from the Cyber Security Office, provides C&A and SDLC security policy, requirements, and assistance to PMs. The PM should contact an IT Security Officer as early in the development life cycle as possible and obtain their assistance, as a member of the IPT, with the C&A and SDLC process.

(3) Additionally, with the assistance from the Information Security Officer, the PM will conduct a FIPS 199 impact analysis to address data/information and security requirements and determine the security categorization level (SCL).

c. **Privacy Considerations.** The increased risk of identity-theft, as well as heightened concerns about the protection of electronic and paper records containing personal information, make privacy a major consideration. At VA, privacy is particularly sensitive because of the financial and health data processed on VA IT systems.

(1) Listed below are Federal laws and regulations dealing with privacy. The Business Sponsor and PM needs to consider them during the Concept Definition Phase:

(a) The Privacy Act of 1974.

(b) The E-Government Act of 2002.

(c) The Children's Online Privacy Protection Act of 1998.

(d) The Clinger-Cohen Act of 1996.

(e) The Health Insurance Portability and Accountability Act of 1996.

(f) The Paperwork Reduction Act of 1995.

(g) The Computer Matching and Privacy Protection Act of 1988.

(h) The Freedom of Information Act of 1996.

(i) The Federal Data Quality Act.

(j) United States Code Title 38 "Veterans' Benefits".

(2) The Privacy and Records Management Office is available to assist the Business Sponsor/PM in ensuring that Privacy issues are addressed as early as possible in the development life cycle. The Business Sponsor/PM must contact Privacy and Records Management Office and request assistance. Privacy and Records Management Office will assign a privacy subject matter expert who will become a member of the IPT and provide privacy support. More information on privacy is presented at the Privacy and Records Management website.

d. **Section 508 Considerations.** The Business Sponsor/PM must address Section 508 Accessibility Standards early on in the development life cycle when the costs of implementation are relatively low and the schedule is generally more forgiving. The cost to remediate accessibility weaknesses increases significantly as a program moves through its life cycle. The Business Sponsor/PM must involve the VA Section 508 coordinator (or a designated representative) as early as possible in the concept definition phase.

e. **IT Operations Considerations.** The Office of Enterprise Operations and Infrastructure (OEOI) is available to assist the Business Sponsor/PM in ensuring that IT operational considerations are addressed early in the development life cycle. The Business Sponsor/PM must contact OEOI and request assistance.

5. Exit Criteria. The Exit Criteria for Phase 0 are as follows:

a. Approved Charter. The approved charter consists of the Concept Paper, Milestone 0 Review Briefing, and an approved Milestone 0 Decision Memorandum from the PATS Board.

b. Identified PM or a list of viable candidates to serve as PM.

CHAPTER 4. REQUIREMENTS DEVELOPMENT (PHASE 1)

1. Purpose. The purpose of the Requirements Development Phase is to further expand upon the approved concept by integrating functional requirements analysis, risk analysis, acquisition strategies, and concept exploration to create a cost-effective solution to satisfy the need or exploit the opportunity. The goal of the Requirements Development Phase is to identify and mitigate as much high risk and uncertainty as possible. This phase is intended to be an iterative one in which the PM, Business Sponsor, and other key stakeholders cycle through the Project Management Process Groups in an effort to further develop and analyze alternative solutions that can satisfy the business requirement(s) defined in the previous phase.

2. Entry Criteria. The entry criteria for Phase 1 are as follows:

a. Approved Charter. The approved charter consists of the Concept Paper, Milestone 0 Review briefing, and an approved Milestone 0 Decision Memorandum from the PATS Board.

b. Identified PM or a list of viable candidates to serve as PM. (Note: Development Systems designated as major IT investments must be managed by a VA employee with a VA Level III PM certification.) The certification process is governed by the One VA IT Project Management Certification Board.

3. Process.

a. The Business Sponsor and Office of Enterprise Development identify a PM (if none was identified in the previous phase).

b. The Business Sponsor and PM review and update (if necessary) the list of stakeholders identified in the Concept Paper and select the IPT members.

c. The Business Sponsor, PM, and stakeholders develop the scope statement. The scope statement must take into account all guidance or intent issued by the PATS Board during the Milestone 0 Review Briefing and/or noted in the Milestone 0 Decision Memorandum.

d. The Business Sponsor, PM, IPT, and stakeholders conduct a requirements analysis and document their findings in a Requirements Document. The requirements should be analyzed to ensure that they are all within scope and align with criteria and/or constraints presented and decided upon at the Milestone 0 Review. The requirements should address all business functions and processes that will be impacted. Additionally, the requirements should be clearly stated. All of the following categories should be considered when conducting a requirements analysis:

(1) Input

(2) Output

(3) Reliability

(4) Availability

(5) Maintainability

(6) Performance

(7) Accessibility

(8) Environmental conditions

(9) Ergonomic

(10) Safety

(11) Security

(12) Facility

(13) Transportability

(14) Training

(15) Documentation

(16) External interfaces

(17) Testing

(18) Quality provisions

(19) Policy and Regulatory

(20) Compatibility to existing systems

(21) Standards and technical policies

(22) Conversion

(23) Growth capacity

(24) Installation

e. The PM chooses an appropriate development life cycle for the program and establishes a proposed Milestone Review schedule. When selecting a development life cycle model, the PM must take into consideration many factors, such as risk and the stability of requirements. The PATS Board will review the development life cycle and Milestone schedule during the Milestone 1 Review Briefing.

f. The PM is responsible for completing the following activities with the assistance of the IPT:

(1) Create an Organizational Breakdown Structure (OBS).

(2) Create a Responsibility Assignment Matrix (RAM).

(3) Create a Work Breakdown Structure (WBS), WBS Dictionary, and schedule using Primavera®.

(4) Create a Risk Management Plan (Identification, Analysis, Response Planning, and Monitoring and Controlling). All known risks, opportunities, assumptions, constraints, and issues should be documented.

(5) Create acceptance and quality criteria and document them in a Quality Management Plan. The Quality Management Plan should reference performance metrics.

(6) Create an Integrated Change Control Plan.

(7) Create a Communications Management Plan.

(8) Conduct detailed cost estimating.

(9) Create a risk-adjusted Performance Measurement Baseline (PMB).

(10) Create the Program/Project Management Plan. The minimum requirements for the Program/Project Management Plan are objectives, expected deliverables, milestones, scope, and Performance Measurement Baseline (PMB).

(11) Conduct a Privacy Impact Assessment (PIA) and submit it to the VA Privacy Section.

(12) Create a Procurement Management Plan with the Contracting Officer and/or contracting activity's assistance. The Procurement Management Plan must, at a minimum, include period of performance, proposed contract type, performance-based contracting requirements, acquisition plan and potential sources.

(13) The PM must develop the business case (e.g., Office of Management and Budget (OMB) Exhibit 300) and submit it to the Office of IT Enterprise Strategy, Policy, Plans, and Programs (SPP) in accordance with the information provided in the CIO's annual Data Call memorandum. The majority of the information that the PM needs to complete the business case should be available in the Concept Paper, project plans, and other project documentation. To develop the strongest business case possible, the PM should be sure to solicit input from the members of the IPT. The business case must be completed in the Capital Asset Management System (CAMS).

(14) SPP reviews the business case and works with the PM to correct deficiencies and strengthen the document.

(15) The PM develops the Milestone 1 Review briefing slides and forwards them to the PATS Board Secretariat. The information presented in the briefing slides must convey the same information contained in the business case.

(16) The CAR Team reviews the Milestone 1 materials and the Secretariat schedules the Milestone 1 Review with the PATS Board.

(17) The PM presents the Milestone 1 Review briefing to the PATS Board. The PATS Board evaluates the program and renders their decision and any conditions or constraints in the form of a Milestone 1 Decision Memorandum.

4. Competency Assessment Review Considerations.

a. **Enterprise Architecture Alignment.** The enterprise architect will continue to assist the PM in addressing the enterprise architecture concerns listed below:

(1) Developing technical requirements and the concept of operations diagram.

(2) Identifying sharable service components.

(3) Creating a general design solution diagram and narrative.

(4) Ensuring alignment with Federal Enterprise Architecture (FEA) and VA Enterprise Architecture.

(5) Completing the Enterprise Architecture section of the Exhibit 300.

(6) After the PATS Board approves the concept at the Milestone 1 Review briefing, the EA Office will update the "To-Be Target Architecture" inventory.

b. **IT Security Considerations.** During the Requirements Development Phase, the PM must continue working with the Information Security Officer Representative to ensure the program will be certified and accredited. The security expert will assist the PM in the following security activities.

(1) Create a preliminary System Security Plan (SSP), Security Controls Assessment (SCA) Plan, and identify the baseline security controls as mandated by FIPS 200 and listed in NIST SP 800-53. These plans establish the security policies, processes, and procedures that test and mitigate the security risks to the confidentiality, integrity, and availability of VA information and information systems. The SCA serves as the basis for the certification of the system in the C&A process.

(2) Conduct a preliminary security risk assessment (RA) in accordance with NIST SP 800-30.

(3) Create a Security Configuration Management Plan.

(4) Enter the project into the Security Management and Reporting Tool (SMART) to complete the annual FISMA Survey required for all Exhibit 300 IT investments.

(5) Create a Plan of Action and Milestones (POA&M). If deficiencies are identified in the FISMA Survey, the PM must create a POA&M that outlines how and when the deficiencies will be corrected. More information on FISMA and POA&M can be found on the OCIS Portal.

c. **Privacy Considerations.** During the Requirements Development Phase, the PM must prepare a Privacy Impact Assessment (PIA) if during development or operations, the system will administer information in identifiable form collected from or about members of the public. The PM submits the PIA to the Privacy and Records Management Office.

(1) A PIA is an analysis that seeks to identify and mitigate the privacy and security risks associated with the use of personal information. A privacy impact assessment provides a framework for ensuring that privacy, security and other vital data stewardship issues are identified, addressed and incorporated into the conception, design, operation, redesign, and maintenance of electronic information systems. In addition, PIAs form the basis for the privacy reviews conducted by the VA on all privacy-protected data, as mandated by VA Directive 6502, *Privacy Program*, Section 3.d.(7).

(2) The PM must create a PIA for all new or significantly altered major IT investments administering information in identifiable form collected from or about members of the public. The PM submits the PIA to the Privacy and Records Management Office, who review the document and either send it back to the PM for revision, or pass it along to OMB.

(3) Details on the PIA, its privacy principles, and instructions for completing one can be found on the Privacy and Records Management website.

d. **Section 508 Considerations.** Section 508 requires Federal departments and agencies that develop, procure, maintain, or use Electronic and Information Technology

(EIT) to ensure that Federal employees and members of the public with disabilities have access to and use of information and data, comparable to that of employees and members of the public without disabilities – unless an undue burden exception is granted. The PM must state how they are planning to meet the requirements of Section 508 that are relevant to the program to include system testing. Additionally, the PM must complete a Conformance Validation Statement (CVS). This form is available from the Section 508 Office. The Section 508 Coordinator will review the CVS and verify that the PM is following the requirements of Section 508.

e. **IT Operations Considerations.** The PM must continue to work with the Office of Enterprise Operations and Infrastructure to ensure IT operational considerations are adequately addressed.

5. Exit Criteria. The exit criteria for Phase 1 are as follows:

a. Business case approved by the Office of Management and Budget.

b. Validated Performance Measurement Baseline.

c. Requirements Document.

d. PIA completed and submitted to VA Privacy.

e. Project Management Plan and all required subsidiary plans complete.

f. Acquisition Strategy Plan complete.

g. Project schedule and other information entered into Primavera® in accordance with the Primavera® Standard Operating Procedures and Earned Value Management Application Guide.

h. Integrated Project Team (IPT) identified.

i. Milestone 1 Review briefing presented to the PATS Board.

j. Approved Milestone 1 Decision Memorandum.

CHAPTER 5. SYSTEM DESIGN AND PROTOTYPE (PHASE 2)

1. Purpose. The purpose of the System Design and Prototype Phase is to focus on the design of the system that establishes the baseline and identifies the specifications for system development. Not all programs require the design of an entirely new system; some are an acquisition of a system or application, a development of a prototype effort, or a research/study effort.

2. Entry Criteria. The entry criteria for Phase 2 are as follows:

a. Business case approved by the Office of Management and Budget.

b. Validated Performance Measurement Baseline.

c. Requirements Document.

d. PIA completed and submitted to VA Privacy.

e. Project Management Plan and all required subsidiary plans complete.

f. Acquisition Strategy Plan complete.

g. Project schedule and other information entered into Primavera® in accordance with the Primavera® Standard Operating Procedures and Earned Value Management Application Guide.

h. Integrated Project Team (IPT) identified.

i. Milestone 1 Review briefing presented to the PATS Board.

j. Approved Milestone 1 Decision Memorandum.

3. Process.

a. Using the requirements identified in Phase 1 as a guide, the IPT documents general and detailed design specifications.

b. Update life cycle cost estimates

c. PM develops solicitation requirements for proposed procurements.

d. Participate in Integrated Baseline Review.

e. Achieve earned value management system ANSI compliance.

f. Enter appropriate procurement information into the VA IT Tracker System.

g. PM and Contracting Officer finalize required procurement documents.

h. IPT prepares prototype development/test plan (criteria and metrics should be linked to and show support of the program scope).

i. Develop the System Security Plan (SSP).

j. Create prototype, proof of concept, and/or demonstration, as necessary.

k. Test prototype, validate proof of concept, and/or conduct demonstration.

l. Document results of the test, validation, and/or demonstration.

m. Document Business Sponsor, user, and customer acceptance.

n. The PM develops the Milestone 2 Review briefing slides and forwards them to the PATS Board Secretariat.

o. The CAR Team will conduct a Competency Assessment Review of Milestone 2 materials and the Secretariat schedules the Milestone 2 Review with the PATS Board.

p. The PM presents the Milestone 2 Review briefing to the PATS Board. The PATS Board evaluates the program and renders their decision and any conditions or constraints in the form of a Milestone 2 Decision Memorandum.

4. Competency Assessment Review Considerations

a. **One VA Enterprise Architecture Considerations.**

(1) The enterprise architect will continue to assist the PM in addressing the enterprise architecture concerns listed below.

(2) Creating a design document that will be reviewed by the Planning, Architecture, Technology, and Services (PATS) Board. The PATS Board will perform initial, preliminary, and critical (final) reviews of the system design document.

(3) Ensuring continued alignment with Federal Enterprise Architecture (FEA) and VA Enterprise Architecture.

(4) After the PATS Board approves the program at the Milestone 2 Review Briefing, the EA office will update the new initiative in the “To-Be Target Architecture” inventory.

b. **IT Security Considerations.** The PM must continue to address security during the System Design and Prototype Phase. Security can be designed into a new system at a lower cost in the design phase than attempting to fit it in later in the development life cycle.

(1) During the Design and Prototype Phase, the PM, in partnership with the Information Security Officer, must create/update the following security documentation as necessary:

(a) System Security Plan: FIPS 200, NIST SP 800-53 and SP 800-18

(b) Contingency Plan and Disaster Recovery Plan: NIST SP 800-34 and 800-84

(c) Security Configuration Management Plan

(d) Security Controls Assessment plan and procedures: NIST SP 800-47

(e) Security Risk Assessment and Security Assessment Plan: NIST SP 800-30

(f) SMART FISMA Survey and POA&M

(2) A PM in charge of any system, prototype, or otherwise, that will attach to a production network or use live data must apply for a standard Authority to Operate (ATO). If the system or prototype fails and sufficient mission criticality is justified, an Interim Authority to Operate may be granted for a specific period of time in order to correct deficiencies.

c. **Privacy Considerations.** The PM must ensure that Privacy issues continue to be addressed during the System Design and Prototype Phase. The PM must update

the Privacy Impact Assessment if the major IT investment has been significantly altered since the original PIA was created.

d. **Section 508 Considerations.** It is critical that accessibility be included in the design stage of a new application or information system. Accessibility can be designed into a new system at a lower cost in the design phase than attempting to remediate the system later in the life cycle. The accessibility validation process is a formal test methodology that examines system accessibility requirements mandated by the Section 508 Standards referenced in VA Directive 6221, *Accessible and Electronic and Information Technology*, and its related Handbook. During this phase, accessibility documentation should continue to be updated as necessary. As part of the documentation package the PM is encouraged to fill out a Voluntary Product Accessibility Template (VPAT) from the vendor which details how the products will meet the specific requirements of Section 508 (if the system will use Commercial off the Shelf (COTS) software, the PM must complete the Conformance Validation Statement (CVS) in order to assure validation conformance. In addition, the PM must coordinate with the VA Section 508 Accessibility Testing &Training Center (T&TC) for product testing against the relevant standard. After testing, the VA Section 508 Accessibility T&TC staff will provide a copy of the signed CVS document to the PM acknowledging that the Electronic and Information Technology system meets the Section 508 requirements. This CVS document will include the date the system was tested.

e. **IT Operations Considerations.** The PM must continue to work with Office of Enterprise Operations and Infrastructure (OEOI) to ensure IT operational considerations are adequately addressed. The PM must contact OEOI and request assistance.

5. Exit Criteria. The exit criteria for Phase 2 are as follows:

a. System Design Specifications document;

b. Test and Evaluation Master Plan and Product Support Plan;

c. Results of System Prototype tests, proof of concept validation, or system demonstration (as applicable);

d. Updated Requirements Traceability Matrix and System Requirements Document (if needed);

e. Privacy Documentation (Privacy Impact Assessment (PIA), System of Records Notices (SORN));

f. Logical and Physical Data Models;

g. Information Exchange Packages;

h. 508 Compliance;

i. System Security Plan, Security Controls Assessment plan and procedures, Security Risk Assessment, Contingency Plan, SMART FISMA Survey, and POA&M;

j. Milestone 2 Review briefing presented to the PATS Board; and an

k. Approved Milestone 2 Decision Memorandum.

CHAPTER 6. SYSTEM DEVELOPMENT AND TESTING (PHASE 3)

1. Purpose. The purpose of the System Development and Testing Phase is to develop the detailed design from Phase 2 into an operational solution in accordance with the program/project management plan, approved baseline requirements, and other applicable program/project documentation. The system is developed, documented, and required internal testing and/or validation is performed. The internal testing portion of Phase 3 is usually conducted by the developers and should include unit tests, system tests, and function tests. Once internal testing is complete, the PM makes the solution available for external (environmental) testing. In preparation for Phase 4 (System Deployment), a users' guide, operations guide, and training plan must be created. The PM and IPT must review the deployment criteria and make required adjustments based on feedback and knowledge garnered during development and testing.

2. Entry Criteria. The entry criteria for Phase 3 are as follows:

a. System Design Specifications document.

b. Test and Evaluation Master Plan and Product Support Plan.

c. Prototype of system (if applicable).

d. Updated System Security Plan, Security Controls Assessment plan and procedures, Security Risk Assessment, and Contingency Plan.

e. ANSI Compliant Earned Value Management System

f. Updated program/project management documentation, including Risk Register, Change Control Log, Quality Management Plan, etc.

g. Milestone 2 Review briefing presented to the PATS Board.

h. Approved Milestone 2 Decision Memorandum.

3. Process.

a. Update program/project management plan and subsidiary plans.

b. Update life cycle cost estimates.

c. Prepare users' guide, operation guide, and/or training plan.

d. Establish functional and security controls testing criteria. (The testing criteria should comply with metrics established in prior phases.)

e. Test and validate system for full scale deployment.

f. Solicit feedback from customer to ensure all requirements are met.

g. Review/update Risk Management Plan.

h. Review contracts and proposals with Contracting Officer.

i. The PM develops the Milestone 3 Review briefing slides and forwards them to the PATS Board Secretariat.

j. The CAR Team conducts a Competency Assessment Review of the Milestone 3 materials and the Secretariat schedules the Milestone 3 Review with the PATS Board.

k. The PM presents the Milestone 3 Review briefing to the PATS Board. The PATS Board evaluates the program and renders their decision and any conditions or constraints in the form of a Milestone 3 Decision Memorandum.

4. Competency Assessment Review Considerations.

a. **One VA Enterprise Architecture Considerations.**

(1) During the System Development and Testing Phase, the PM, enterprise architect, and other EA office staff will ensure that the program continues to meet all of its user acceptance requirements and that it has completed all pre-deployment planning and preparation requirements. Key issues include whether the system satisfies functional and performance requirements and whether it is adequately supported from a human factors, documentation, maintenance, and training perspective.

(2) Specific enterprise architecture concerns that the PM must address with the enterprise architect during this phase are presented below:

(3) Test Readiness Review. Review testing strategy and desired results.

(4) Acceptance Testing Results. This includes Security, Privacy, and Section 508 issues and should include testing by users in “real-life” scenarios.

(5) Prototype results. If a prototype was used, perform a review of the lessons learned, the results of the prototype, and reactions to the prototype so that deficiencies can be corrected.

(6) Update deployment plans and schedules based on prototype results.

(7) After the PATS Board approves the program at the Milestone 3 Review Briefing, the EA office will update the new initiative in the “To-Be Target Architecture” inventory.

b. **IT Security Considerations.** During the System Development and Testing Phase, the PM must, in concert with the Information Security Officer, update and submit the Certification and Accreditation package (updated System Security Plan, Security Risk Assessment, Security Controls Assessment test and results), certifier’s statement of residual risk, associated POA&M to correct any remaining deficiencies, and a memorandum requesting an Authority to Operate in accordance with VA policy and NIST SP 800-37. A Continuous Monitoring Plan must be created that addresses periodic testing and validation of security controls described in the SSP. These security concerns must be integrated into the Change Management Plan. The PM can seek specific guidance about IT security from the Information Security Office representative.

c. **Privacy Considerations.** The PM must ensure that Privacy issues continue to be addressed during the System Development and Testing Phase. The PM must update the Privacy Impact Assessment if the major IT investment has been significantly altered since the original PIA was created.

d. **Section 508 Considerations.** In accordance with VA Directive 6221, *Accessible and Electronic and Information Technology*, the PM must submit to the VA Section 508 Accessibility Testing and Training Center (T&TC) a signed Conformance Validation Statement (CVS) with a copy of the Voluntary Product Accessibility Template (VPAT) or equivalent accessibility documentation, based on the Electronic Information Technology

and Accessibility Standards. This process ensures that system controls, menus and functions meet all applicable requirements and are in place and working properly. In order to achieve conformance with the requirements of Section 508, the PM must submit the relevant electronic and information technology to the VA Section 508 Accessibility T&TC (or other VA approved test facility) for conformance testing. This individual verification and validation process will be conducted by the staff of the VA Section 508 Accessibility T&TC (or designated representative) and will upon successful completion of conformance testing provide a signed copy of the CVS document to the PM acknowledging conformance to the standards and the date the system was tested. Accessibility is an integral topic of the Milestone 3 Briefing. Conformance with Section 508 requirements is mandatory prior to a system going into production. .

e. **IT Operations Considerations.** The PM must continue to work with Office of Enterprise Operations and Infrastructure (OEOI) to ensure IT operational considerations are adequately addressed. The PM must contact OEOI and request assistance.

5. Exit Criteria. The exit criteria for this phase are as follows:

a. Milestone 3 Review briefing presented to the PATS Board.

b. Approved Milestone 3 Decision Memorandum.

c. Users' guide, operations guide, and/or training plan created.

d. System test results documented.

e. Supporting security documentation and Authority to Operate (ATO) memorandum.

f. Updated program/project management documentation, including Risk Register, Change Control Log, Quality Management Plan, etc.

CHAPTER 7. SYSTEM DEPLOYMENT (PHASE 4)

1. Purpose. The purpose of the System Deployment Phase is to implement the system and conduct necessary system training. Implementation is completed in accordance with the deployment requirements established in earlier phases. Depending upon the complexity and size of the program, the deployment may occur all at once or iteratively.

2. Entry Criteria. The entry criteria for Phase 4 are as follows:

a. Milestone 3 Review briefing presented to the PATS Board.

b. Approved Milestone 3 Decision Memorandum.

c. Users' guide, operations guide, and/or training plan created.

d. System test results documented.

e. Authority to Operate (ATO) memorandum.

f. Updated program/project management documentation, including Risk Register, Change Control Log, Quality Management Plan, etc.

3. Process.

a. Update life cycle cost estimates.

b. Update project plans.

c. Assess user deployment readiness.

d. Communicate benefits of system/capability to users via communications strategies.

e. The Office of Enterprise Operations and Infrastructure formally identifies an Operations Manager. Prior to the program becoming an operational system, the Operations Manager and Senior Leadership must identify the operational staff responsible for ongoing maintenance and support. It is important to ensure that all personnel involved with operations are properly trained and ready to conduct operations. (Note: Operational Systems designated as major IT investments must be managed by a VA employee with a VA Level III PM certification. The certification process is governed by the One VA IT Project Management Certification Board.

f. Select method of deployment and obtain Business Sponsor approval.

g. Deploy system.

h. Monitor and control deployment activities.

i. Monitor customer/user satisfaction.

j. Operations Manager and Contracting Officer determine new procurement requirements necessary for system operation (operations, support, maintenance, and training).

k. Operations Manager, PM, and Contracting Officer prepare service contract(s), as required.

l. The Contracting Officer performs contract administration on existing contracts.

m. Towards the end of this phase, the focus will be contract termination for the development efforts.

n. PM creates and implements Closeout Plan and Termination Report.

o. PM consolidates lessons learned. Lessons learned should be collected throughout the program life cycle and from as many different sources as possible. During this phase, the PM consolidates and documents the lessons learned in preparation for closeout and the Post Implementation Review.

p. The PM develops the Milestone 4 Review briefing slides and forwards them to the PATS Board Secretariat.

q. The CAR Team conducts a Compliance Assessment Review of the Milestone 4 materials and the Secretariat schedules the Milestone 4 Review with the PATS Board.

r. The PM presents the Milestone 4 Review briefing to the PATS Board. The PATS Board evaluates the program and renders their decision and any conditions or constraints in the form of a Milestone 4 Decision Memorandum.

4. Competency Assessment Review Considerations.

a. **One VA Enterprise Architecture Considerations.** During the System Deployment Phase, the enterprise architect will continue to support the PM, ensuring that the new system continues to remain aligned with the Federal Enterprise Architecture (FEA) and the VA Enterprise Architecture.

b. **IT Security Considerations.** The PM must employ disciplined change management practices to track all modifications to the application. Significant changes require re-evaluation of the operating risks, security documentation, and FISMA survey. These, in turn, may trigger a revision to the system's Certification and Accreditation package or supporting documentation. The PM, Operations Manager, and Information Security Officers must jointly review the system security activities and related documentation to determine if modifications or updates to the security controls or documentation of the system (or related systems) are required by the actual deployment of the system into the operational environment.

c. **Privacy Considerations.** The PM must ensure that Privacy issues continue to be addressed during the System Deployment Phase. The PM must update th0e Privacy Impact Assessment (PIA) if the major IT investment has been significantly altered since the original PIA was created.

d. **Section 508 Considerations.** The PM must notify the VA Section 508 Accessibility Testing & Training Center (T&TC) of any Section 508 or accessibility problems concerning the deployed system. All modifications or updates to the system must be tested and the T&TC (or other approved VA test facility) must revalidate that the Electronic and Information Technology still meets the Section 508 requirements.

e. **IT Operations Considerations.** The PM must continue to work with Office of Enterprise Operations and Infrastructure (OEOI) to ensure IT operational considerations are adequately addressed. The PM must contact OEOI and request assistance.

5. Exit Criteria.

a. Milestone 4 Review briefing presented to the PATS Board.
b. Approved Milestone 4 Decision Memorandum.
c. Complete deployment of system.
d. Closeout plan.
e. Closeout checklist.
f. Formally identified Operations Manager.
g. Operations Management Plan.
h. Updated program/project management plans.
i. Lessons Learned documented.
j. Business Sponsor formally accepts system.

CHAPTER 8. SYSTEM OPERATION (PHASE 5)

1. Purpose. The purpose of the System Operation Phase is unique since the program recently evolved into an operational status. The Operations Manager assumes responsibility for the operational system, operates and maintains the system, ensures that the system is certified on a recurring basis (as per system specific requirements dictate) so that it remains in conformance with regulations, performs operational analysis on the system, and finally identifies when the system should be modernized, replaced, or retired. The PM is no longer in control of the program, but must complete all associated development closeout activities. Additionally, during this phase, the PM and Operations Manager must collaborate in creating and presenting of the Post Implementation Review (PIR).

2. Entry Criteria.

a. Milestone 4 Review briefing presented to the PATS Board.

b. Approved Milestone 4 Decision Memorandum.

c. Complete deployment of system.

d. Closeout plan.

e. Closeout checklist.

f. Formally identified Operations Manager.

g. Operations Management Plan.

h. Updated program/project management plans.

i. Lessons Learned documented.

j. Business Sponsor’s formal acceptance of the system.

3. Process.

a. Update life cycle cost estimates.

b. Operations Manager collects performance measurement data on the operational system. This data will be used to conduct an Operational Analysis and produce monthly performance reports.

c. Operations Manager monitors and documents customer/user satisfaction.

d. Operations Manager monitors maintenance and other administrative contracts for the system.

e. PM continues to collect and document Lessons Learned.

f. PM and Operations Manager prepare and present PIR.

g. Operations Manager conducts an Operational Analysis on an annual basis.

h. The Office of Enterprise Operations and Infrastructure monitors the performance of the system. If the system requires development, modernization, or enhancement (D/M/E) efforts, the request will have to be forwarded to the BNI and PATS Boards for evaluation. The D/M/E efforts may become a separate major IT investment and must

pass through the procedures and milestones as outlined in Chapters 3-7 of this document.

i. Operations Manager monitors risk and updates the risk management plan.

j. After the initial Milestone 4 review, subsequent Milestone 4 reviews are conducted every three years.

k. Operations Manager creates a Disposition Plan that outlines how the system will be retired. The disposition plan should consider the following when system assets are no longer needed.

(1) Reassign the system assets within the agency.

(2) Declare the system assets as excess and make them available to another agency.

(3) Exchange or sell the system assets as part of a transaction to acquire replacement equipment.

(4) Declare the system assets as surplus and make them available for donation.

4. One VA Enterprise Architecture Considerations.

a. During the System Operation Phase, the Operations Manager must focus on early user experiences, validation of expected results, and performance measurement. If the system has been in an operational state for more than one year, the Operations Manager should focus on assessing the continued need and relevancy of the system and comparing the systems capability with that of newer technologies.

b. After the PATS Board approves the program at the Milestone 4 Review Briefing, the EA office will update the new initiative in the “As-is Architecture” inventory.

5. IT Security Considerations.

a. An Authority to Operate (ATO) granted under VA’s Certification and Accreditation program expires after three years, or when significant changes are made to the system. When either event occurs, the system must undergo a complete Certification and Accreditation process.

b. The Operations Manager must perform a FISMA self-assessment every year and must also monitor and manage security risk by implementing the Continuous Monitoring Plan and regularly updating the content of all security documentation so that they all reflect the current security posture of the system.

c. The Operations Manager must discuss disposal measures with the Cyber Security Office representative if the system (or part of the system) is shut down.

6. Privacy Considerations. The Operations Manager must ensure that Privacy issues continue to be addressed during the System Operations Phase. The Operations Manager must update the Privacy Impact Assessment if the major IT investment has been significantly altered since the original PIA was created.

7. Section 508 Considerations. The Conformance Validation Statement (CVS) is effective until the system receives a major system modification or upgrade. Once a system receives an upgrade, the Operations Manager is responsible for ensuring that

the Section 508 Accessibility Testing and Training Center (T&TC) (or other VA approved test facility) revalidates the system. As part of the review process, the CVS must be resubmitted to the T&TC for review and possible retesting.

8. IT Considerations. The PM must continue to work with IT Operations Office to ensure IT Operations considerations are adequately addressed. The PM must contact IT Operations and request assistance.

9. Exit Criteria. This is the last phase of the IT SDLC Framework. Operational systems remain in Phase 5 for as long as they remain in service. The system will exit Phase 5 when Senior Leadership decides to retire the system and implement the Disposition Plan.

CHAPTER 9. VA PROJECT MANAGEMENT INFORMATION SYSTEMS

1. Definition. A Project Management Information System (PMIS) collects, processes, stores, displays, and disseminates information about VA programs and projects. The core components of the PMIS at VA are complementary software applications—Primavera® and Capital Asset Management System (CAMS).

a. It is important to note that software can never replace good project management skills. The software is very good at processing large amounts of project data. The software's output, however, is only as accurate and useful as the data inputted by the PM or the project team members. For any project management software application to produce worthwhile output, it must have access to accurate and timely data.

2. Primavera®. VA uses Primavera® as the project management software for managing all major IT programs. Primavera® has the capability of integrating project management capabilities into a unified information system for all stakeholders. Primavera® can unite project, resource, and process management, and give PMs and Senior Leadership clear visibility and insight into all VA projects.

a. Primavera® provides for project management, automated cost estimating, "what-if" scenario capabilities, resource management, project tracking, collaboration, web site publication, risk management, document control, and earned value calculations. PMs use Primavera® to:

(1) Develop the WBS.

(2) Develop a time-phased budget.

(3) Develop and control detailed schedules based on deliverables and milestones.

(4) Link schedules to budgets, resources, and documents.

(5) Document and track risks.

(6) Set baselines for performance measurement.

(7) Track manpower resources and requirements.

(8) Produce charts and report.

(9) Track and summarize project data.

(10) Calculate Earned Value metrics.

(11) Control project documents.

b. More information about Primavera® is located in the Primavera® Standard Operating Procedures.

3. Capital Asset Management System.

a. The Capital Asset Management System (CAMS) is VA's portfolio management tool. A portfolio is a collection of projects or programs that are grouped together, evaluated, and optimized to ensure that the organization is achieving its strategic objectives. CAMS automates and assists in the various phases of portfolio management. CAMS is the repository that PMs and Business Sponsors use to submit

their Concept Paper, Exhibit 300, Baseline Change Requests, and other IT Portfolio documentation.

b. The IT Portfolio Management Guide and Appendices contain more information about the portfolio process and CAMS.

CHAPTER 10. INTEGRATED CHANGE CONTROL

1. Purpose. Programs and projects are dynamic efforts and therefore changes to them are inevitable. The goal for managers at all levels is to manage changes in a consistent, timely, and controlled manner. The integrated change control procedures in this chapter describe how changes to an investment's funding level or baseline are routed to the appropriate approval authorities.

a. Integrated change control must be tightly linked with risk and quality control processes at all levels. The impact of the change, as contrasted with the impact of not implementing the change, must be considered from cost, schedule, and scope perspectives for all affected IT investments. The goal is to ensure that changes are documented and formally resolved so that the IT investment objectives and customer expectations are not compromised.

b. An integrated change control system requires change approval authorities to make decisions and provide feedback in a timely manner. Excessive delays on the part of approval authorities will cause the entire change control process to stop functioning.

c. In an effort to comply with Federal regulations, yet still provide managers with some degree of flexibility, VA OI&T distinguishes between two types of changes—baseline changes and funding changes. These changes and their approval processes are presented in the remainder of this chapter.

2. Funding Change Control. The primary objective of funding change control is to empower VA governance boards with the ability to monitor and reassign an investment's funding. Throughout the year, the Offices of Enterprise Development (OED) and Enterprise Operations and Infrastructure (OEOI) review their respective IT investment portfolios. During these reviews, OED and OEOI leadership consider opportunities where it might be advantageous to re-allocate funding within their respective IT portfolios. (See Figure 10-1 for process flow diagram.)

a. In February, the Office of Enterprise Strategy, Policy, Plans, and Programs (SPP) releases a data call to OED and OEOI requesting re-allocation plans for each portfolio. SPP collects the re-allocation plans, checks them for accuracy, and prepares briefing packets for the Business Needs and Investment (BNI) board members.

b. The BNI Board reviews the re-allocation requests and considers them from a portfolio perspective and also from an enterprise perspective (VA IT portfolio). If the BNI Board decides to re-allocate funds, they document their decisions and forward them to the Information Technology Leadership Board (ITLB).

c. The ITLB reviews the proposed re-allocation as an approval authority or concurring authority, depending on the amount of funds involved in the re-allocation proposal.

(1) If the re-allocation involves the transfer of less than $1 million into or out of a major IT investment's funding profile, the ITLB is an approval authority and can either approve or reject the BNI Board's recommendation. If approved, the ITLB sends the packet to the Office of IT Resource Management (OITRM). If rejected, the ITLB has the option to send the re-allocation proposal back to the BNI Board for adjustment and reconsideration.

(2) If the re-allocation involves the transfer of $1 million or more into or out of a major IT investment's funding profile, the ITLB becomes a concurring authority rather than an approval authority. If the ITLB concurs with the BNI Board's recommendation, they must send the re-allocation proposal through the OITRM. If the ITLB does not concur, they have the option to send the re-allocation proposal back to the BNI Board for adjustment and reconsideration.

d. The OITRM reviews the reallocation packet.

(1) If the ITLB *approved* the re-allocation, the OITRM ensures that the information is accurate, verifies that funds are available, transfers the funds, and makes appropriate accounting entries.

(2) If the ITLB *concurred with* the re-allocation, the OITRM ensures that the financial data is accurate, verifies that funds are available, and then forwards the information to Congress, per instructions in the Veterans Affairs Appropriation Act.

e. If a funding change is approved, the office that initiated the funding change request (OED or OEOI) has the option of submitting a request to change the OMB approved baseline for the investment(s) affected by the change in funding. If the OED or OEOI decide to request a re-baseline, they must complete a Baseline Change Request (BCR) form in CAMS and submit it to SPP.

f. SPP will review the BCR to ensure that the request aligns with what was approved in the funding change request. Then, SPP will forward the request to OMB for final approval. Note: An investment's OMB approved baseline will <u>not</u> be adjusted unless OMB approves of the change.

g. An investment may experience an increase in cost variance if its funding level is changed and its baseline is not changed. When this situation occurs, a portion of the cost variance may be explained or justified by the change in funding. OED representatives should consult with SPP for guidance on how to report cost variance during this type of situation.

3. Baseline Change Control. The baseline change control process attempts to control changes to an investment's cost, schedule, and scope (the OMB approved baseline). Baseline changes can normally be separated into two categories—"cost-altering", ones that require a change in funding and "cost-neutral", ones that do not require a change in funding. (See Figure 10-2 for process flow diagram.)

a. OED and OEOI monitor their respective investments and if the need to re-baseline arises, they create a BCR and submit it to SPP. Note: OED and OEOI can delegate the responsibility of creating the BCR in any manner they see fit.

b. SPP reviews the BCR for accuracy and validates that the proposed changes to the baseline are legitimate (per guidance issued by OI&T). SPP endorses the BCR form and submits it to the Planning, Architecture, Technology, and Services (PATS) board.

c. The PATS Board reviews the BCR from a technical perspective. For example, how will an increase/decrease in functionality affect other systems? Or, if deployment

of this system is delayed what will happen to other systems? The PATS Board documents their recommendation and forwards it to the BNI Board.

d. The BNI Board reviews the BCR from a business needs and a fiscal perspective. For example, how will a change in functionality impact VA's ability to service veterans? The BNI Board documents their recommendation and forwards it to the ITLB.

e. The ITLB reviews the BCR and the recommendations provided by the PATS and BNI Boards. The ITLB is a concurring authority for any change to an OMB approved baseline. Note: OMB Circular A-11 specifies that OMB must approve all baseline changes.

(1) If the ITLB concurs with a cost-altering baseline change request, SPP coordinates with OITRM to ensure that an adequate amount of funding is identified and earmarked to cover this change. Then, SPP forwards the BCR to OMB for approval.

(2) If the ITLB concurs with a cost-neutral baseline change request, SPP forwards the BCR to OMB for approval.

f. Throughout the Baseline Change Control and Funding Change Control processes, SPP is responsible for verifying change request data and serving as a liaison among the various offices, boards, and external entities involved in the processes. SPP does not possess approval or concurrence authority over any change request.

g. Proposed changes to a major IT investment's performance measurement baseline (PMB) must be electronically documented on a Baseline Change Request (BCR) form. The BCR is housed in the Capital Asset Management System (CAMS).

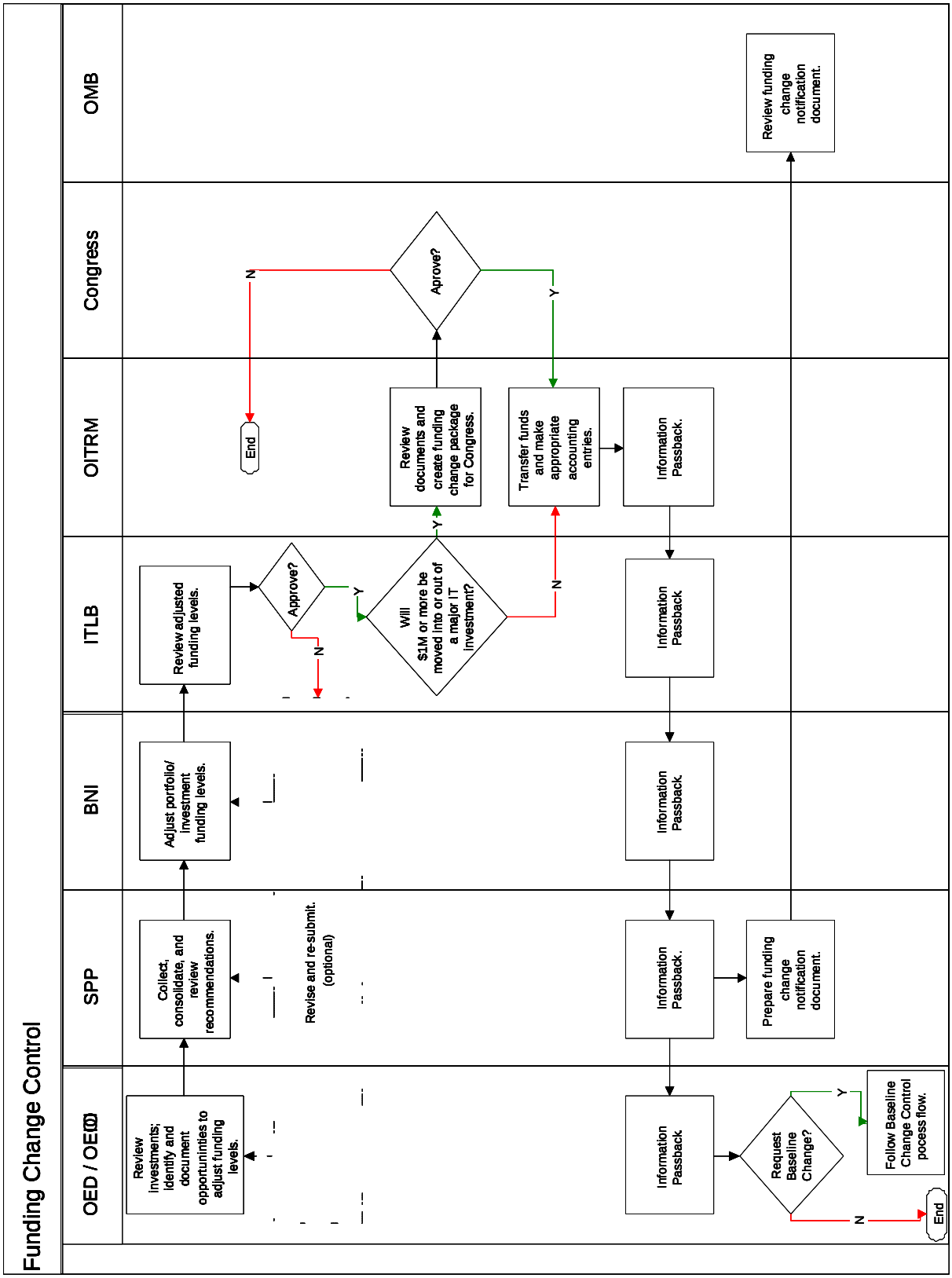


Figure 10-1: Funding Change Control

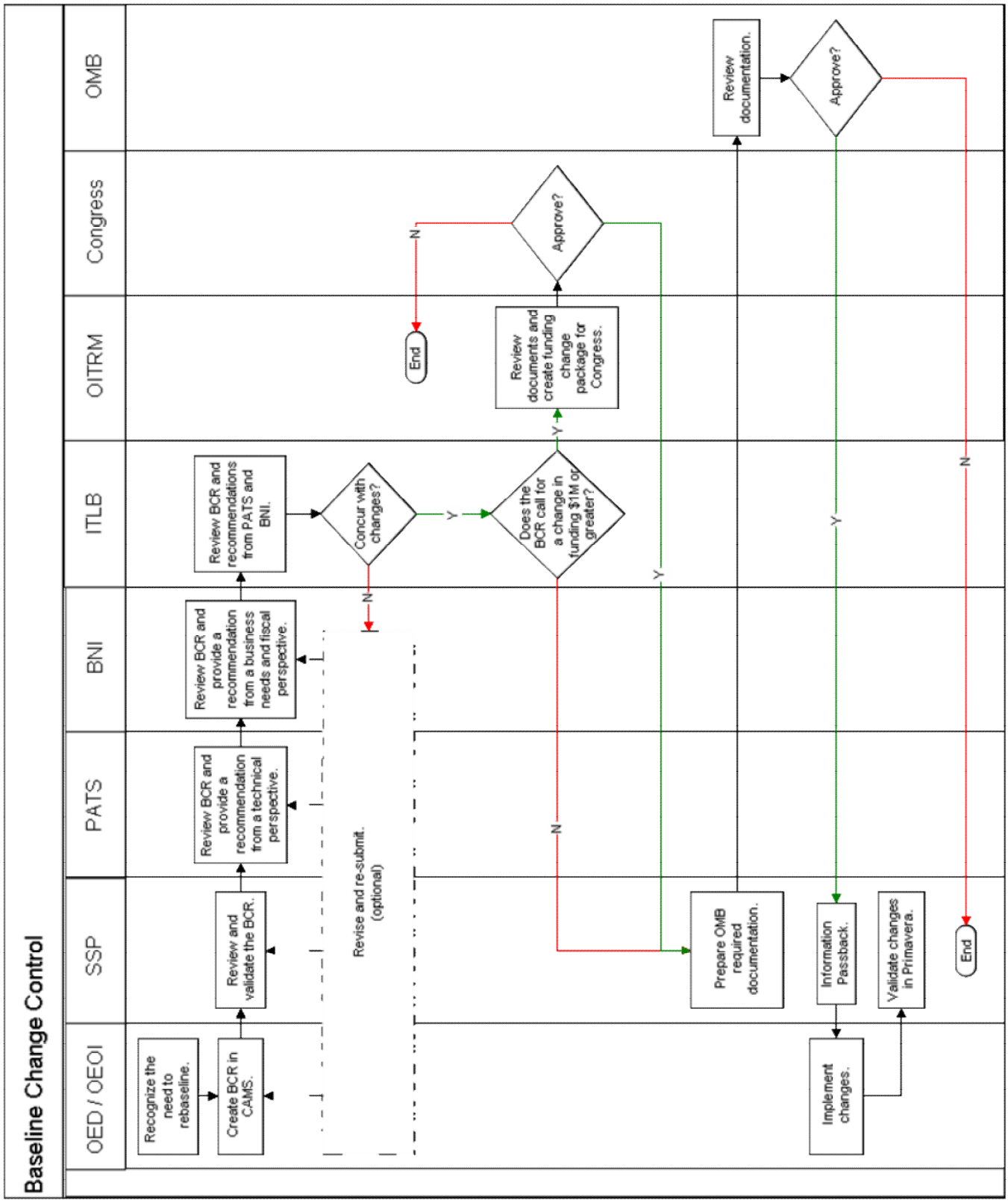


Figure 10-2: Baseline Change Control

CHAPTER 11. PERFORMANCE MANAGEMENT

1. Performance Management Definitions.

a. Performance Management is the basis from which IT value is measured and communicated to the VA business community. It is the process of defining a project and its desired outcomes, setting performance standards, linking budget to performance, reporting results, and holding managers (both project/program managers and Senior Leadership) accountable for results. From a strategic perspective, Performance Management ensures that programs are linked to VA's performance objectives and align with the Strategic Plan. From a tactical perspective, Performance Management empowers managers with quantitative and qualitative data which enables them to objectively analyze the program and make informed decisions about it. Effective Performance Management gives managers the ability to take corrective action before a problem escalates out of control.

b. Performance Measurement is the ongoing process of monitoring and reporting program accomplishments. Typically, performance measurement is conducted by comparing actual performance to planned performance. Performance measurement provides PMs, Customers and Senior Leadership with an accurate assessment of program status.

2. General. The method of performance measurement that the PM uses depends upon whether the major IT investment is in Development / Modernization / Enhancement (D/M/E) phase or Operations and Maintenance (O&M) phase. If the major IT investment is in a D/M/E phase, the PM must use Earned Value Management (EVM). If the major IT investment is in an O&M phase, the PM must use operational analysis.

3. Earned Value Management. EVM is a performance measurement methodology, conducted by PMs, that provides stakeholders with visibility into the cost, schedule, and technical progress of their programs. EVM objectively measures program performance and progress by integrating scope, schedule, and resources. VA PMs are required to use EVM to measure performance. Additionally, they are required to use Primavera® to conduct and report EVM analysis. For more information on VA EVM policy requirements, refer to VA Directive 6061. Other documents that are available to assist PMs with EVM implementation include:

a. Earned Value Management System Application Guide

b. Integrated Baseline Review Toolkit

c. Primavera® Standard Operating Procedures

4. Performance Measurement Baseline (PMB). The PMB is critical to performance management. The PMB is a time phased budget baseline and establishes the project or contract time phased baseline. It integrates scope, schedule, and cost. Once the PM establishes the PMB and the project commences, s/he can use Earned Value techniques to measure work progress and then compare the progress to the PMB at any given point in time. The PMB can also incorporate technical and quality parameters. The following documents contain more detailed information about PMB:

a. Earned Value Management System Application Guide

b. Integrated Baseline Review Toolkit

5. Re-baselining. Re-baselining is the general term used for describing realignment of the performance measurement baseline to improve the correlation between the future work plan and the baseline budget, scope, and schedule. Re-baselining rules and criteria are defined in the Earned Value Management System Application Handbook and require the PM to adhere to Integrated Change Control procedures outlined in this document. PMs cannot re-baseline to correct general cost overruns and/or schedule slippages. The following guidelines describe the circumstances under which a performance measurement baseline can be changed:

a. To achieve a realistic, vetted future work plan. This is the primary reason to change the performance measurement baseline.

b. To restructure a program when the program goals, requirements, methods, solution, or strategy have changed to such an extent that the existing baseline can no longer provide a realistic measure of program progress.

c. To re-establish a more realistic measure of progress when one or more baseline parameters have been breached to such an extent that those measures are no longer applicable. This would include poor past performance (significant positive or negative variance) that make measurement against the baseline meaningless.

6. Operational Analysis. Operational analysis is a method of examining the current and historical performance of an operational (or steady-state) investment and measuring that performance against an established set of cost, schedule, and performance parameters. An operational analysis is, by nature, less structured than Earned Value Management. It is more creative in nature, and should trigger considerations of how the objectives could be better met, how costs could be saved, and whether the organization should even be performing a particular function. An operational analysis must demonstrate that the Operations Manager and IPT have done a thorough examination of VA's continued need for the investment, the level of performance being achieved by the investment, the advisability of continuing the investment, and alternative methods of achieving the same investment results.

a. An operational analysis must answer subjective questions in the following specific areas:

(1) Customer Results. The analysis should focus on whether the investment is fully meeting the customer's needs and whether the cost to the customer is as low as it could be for the results delivered. The analysis should be able to show whether the investment is delivering the goods or services that it is intended to deliver.

(2) Strategic and Business Results. The analysis should measure the effects of the investment on the performing organization and should provide a measure of how well the investment is meeting business needs and whether it is contributing to the achievement of the organization's strategic goals. The analysis should consider the following questions.

(a) "Does this investment help us get our job done?"

(b) “What strategic goal does this investment address and how does it help us achieve that goal?”

(c) “Is there another organization that could be doing this work better, more efficiently or at lower cost?”

(d) “Is there another organization currently doing this work or something similar? Is there redundancy?”

(3) Financial Performance. The analysis should compare current performance with a pre-established cost baseline. Financial performance is a quantitative measure and will be subjected to a periodic review for reasonableness and cost efficiency. These periodic reviews will be in the form of Monthly Performance Reviews, the Post Implementation Review, and Program Management Reviews.

(4) Innovation. The analysis should look at the investment’s performance in terms of the three previous factors and demonstrate that the Operations Manager considered alternative methods of achieving the same customer results and strategic goals. The analysis should consider the following questions.

(a) “How could we better meet the customer needs?”

(b) “Could we meet these same customer needs at lower cost?”

(c) “How could this investment be combined with others to better meet our organization’s strategic goals?”

(d) “How could we make better use of technology to provide a better level of service at lower cost?”

b. The Capital Programming Guide and the VA Operational Analysis Guide contain more information on operational analysis.

CHAPTER 12. GOVERNANCE REVIEWS

1. Governance Reviews. Senior Leadership use a variety of reviews to verify that programs will satisfy VA mission needs. These reviews provide information to help make decisions and they demonstrate and confirm a program's accomplishments at various phases. Program reviews incorporate input from customers, users, suppliers, contractors, managers, and stakeholders. The general objectives of reviews include the following:

a. Ensure readiness to proceed to the next program phase.

b. Ensure orderly and mutually supportive progress of various program efforts.

c. Confirm functional integration of program products and efforts of organizational components.

d. Enable identification and resolution of issues at the earliest possible time, lowest work level, and least cost.

e. Support event-based (milestone) decisions.

f. Control risk.

g. Communicate information on current status, progress, performance, completeness, correctness, and/or quality.

2. Review Categories. VA governance reviews are categorized in the following manner:

a. Regular/Periodic. These reviews are time driven and they typically communicate current status, trends, issues, risks, and progress.

b. Event Driven. These reviews occur at specified points in the program's life cycle. Typically, these reviews are used to support the decision to proceed to follow-on program phases.

c. Special. These reviews are neither time nor event driven. They occur on an as-needed basis. An internal or external program audit is an example of a special review. Another example is a significant change in scope or available funds.

3. Milestone Reviews. The IT SDLC Framework is structured into discrete, logical steps separated by major decision points referred to as milestones. The milestone marks the end of a phase. When a program approaches milestones, the PM must present a briefing to the PATS Board before the program can progress to the next phase. These required briefings are called the Milestone Review Briefings. PMs must schedule the Milestone Review Briefing through the PATS Board Secretariat. The VA IT Governance Boards are the primary audience and decision authority for the Milestone Review Briefings.

a. The Milestone Review Briefing provides the basis for comprehensive management, progressive decision-making, and authorization of funding for each phase of the IT SDLC Framework.

b. The content of the Milestone Review Briefing depends on the milestone that the program is completing. There are five milestones in the IT SDLC Framework and five corresponding Milestone Review Briefings.

(1) Milestone 0 Review Briefing: Concept Definition Approval for Requirements Development. At Milestone 0, the Business Sponsor must address the basic areas necessary to warrant approval for requirements development and authorization to expend the funds necessary to establish the program's business case.

(2) Milestone 1 Review Briefing: Requirements Approval for Design. At Milestone 1, the PM must address areas necessary to warrant Senior Leadership's approval of resources for continuing the project into the design effort. At Milestone 1, the PM and Business Sponsor must demonstrate a well-founded business case for the effort and a complete set of requirements

(3) Milestone 2 Review Briefing: System Design Approval for Development. At Milestone 2, the PM must provide a completed design to warrant approval to develop and test the system/subsystem. In addition to the completed design, the PM will provide the results of the prototype (if any) and request permission to move into development and testing.

(4) Milestone 3 Review Briefing: System Development Approval for Deployment. At Milestone 3, the PM must address areas necessary to warrant approval to deploy the system/subsystem. Key issues to be addressed are whether the program has successfully demonstrated (through user acceptance testing) that functional and performance requirements were met.

(5) Milestone 4 Review Briefing: Deployment Approval for Transfer to Operations. At Milestone 4, the PM requests approval to transfer authority to the Operations Manager. This Milestone marks the official end of development efforts and the beginning of steady-state operations. After the initial Milestone 4 review, subsequent reviews are conducted, such as Post-Implementation and Operational Analysis reviews.

4. Integrated Baseline Review. The Integrated Baseline Review (IBR) is an opportunity for the PATS Board to evaluate a program's Performance Measurement Baseline, identify and mitigate risks, and update the program's Estimate at Completion (EAC), if necessary. The purpose of the IBR is to increase the level of confidence in the program's schedule and budget and achieve a mutual understanding of the Performance Measurement Baseline (PMB) and its relationship to the underlying EVM system and processes. The IBR process enables PMs and Organizational Managers to effectively use the program's Performance Measurement Baseline (PMB) to quantitatively assess performance and better understand program risks. The IBR is conducted no later than six months after program initiation or a baseline change. During the IBR, the PATS Board and the PM reach mutual understanding of the PMB and agree on a plan of action to handle identified risks. The following documents contain more detailed information about IBR:

a. Earned Value Management System Application Guide

b. Integrated Baseline Review Toolkit

c. The Program Managers' Guide to the Integrated Baseline Review Process

5. Program Management Review. The Program Management Review (PMR) is a performance related briefing presented to the PATS Board on an annual basis except for years in which a Milestone Review is held.

6. Post-Implementation Review. The Post Implementation Review (PIR) evaluates the program's development history and "lessons learned" in order to identify training requirements and knowledge to be used by future PMs and IPTs to mitigate risks, refine estimating parameters, and improve overall program management. The PIR is intended to be an assessment of the investment's success in meeting the deployment plans and performance metrics to include cost, schedule, security, and return on investment. It also includes an assessment of system training, documentation, and maintenance support for the IT system, as well as whether any significant changes are required to the IT system. The PIR briefing will be presented to the PATS Board and needs to be scheduled with the PATS Board Secretariat after the system has been in operation for a period of time. Typically, 6-18 months is adequate to gather an appropriate amount of operational data.

7. Planning, Architecture, Technology, and Services (PATS) Board. The PATS Board is the VA-wide governance board that oversees the program management and technical performance of IT service delivery, and development of the IT appropriation multiyear program. The Board performs it duties in accordance with AS/IT PATS Board implementation memorandum dated October 30, 2007. It is chaired by the Deputy Assistant Secretary for IT Enterprise Strategy, Policy, Plans, and Programs (SPP) and principle board members include senior executives representing the business requirements of the Administrations and Staff Offices to include Finance, the Office of Budget and Human Resources Management. Non-voting members of the Board include the DAS for Enterprise Development, the DAS for IT Resource Management, the DAS for Information protection and Risk Management, the DAS for Enterprise Operations and Infrastructure, the Director, IT Quality and Performance and the Director, IT Oversight and Compliance Management. The Enterprise Architect, Systems Engineer, and selected IT service managers also support the Board. The PATS Board governance reviews are supported by Competency Assessment Review Teams as described below.

8. Competency Assessment Review Teams. Governance reviews are conducted by three Competency Assessment Review (CAR) Teams. Each team and their respective 005 office representation are as follows.

a. **Technical Review Board.** The Technical Review Board is chaired by 005E1 and will examine technical, security, privacy and data compliance. Participating offices include 005E, 005Q, 005OP and 005R.

b. **Program Management Review Board.** The Program Management Review Board is chaired by 005E6 and will examine program management execution, with particular emphasis on compliance with and schedule. Participating offices include 005E, 005F and 005X.

c. **Enterprise Architecture Review Board.** The Enterprise Architecture Review Board is chaired by 005E2 and will examine enterprise architecture and business alignment. Participating offices include 005E and 005Q.

9. Monthly Performance Report. Each month, PMs are required to submit a report to VA OI&T. There are two types of monthly reports—one for development efforts (projects and programs) and another for steady state systems. The monthly reports require the PM to present key performance metrics (EVM and/or Operational Analysis, and quality). Additionally, the PM is given the opportunity to provide progress/status details and mitigation strategies. VA OI&T summarizes the performance data from all major IT investments and presents it to the Deputy Secretary and Senior Leadership at the Monthly Performance Review.

RESOURCES FOR IT PROGRAM AND PROJECT MANAGERS

1. General Program/Project Management.

A Guide to the Project Management Body of Knowledge (PMBOK Guide), Third Edition

2. VA Directives and Handbooks.

Directive 0710—Personnel Suitability and Security Program
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=85&FType=2

Handbook 0710—Personnel Suitability and Security Program
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=86&FType=2

Directive 6000—VA Information Resources Management (IRM) Framework
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=1&FType=2

Directive 6051—VA Enterprise Architecture
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=3&FType=2

Directive 6061—VA Earned Value Management System
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=4&FType=2

Directive 6102—Internet/Intranet Services
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=7&FType=2

Handbook 6102—Internet/Intranet Services
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=8&FType=2

Directive 6212—Security of External Electronic Connections
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=13&FType=2

Directive 6221—Accessible Electronic and Information Technology
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=15&FType=2

Handbook 6300.3—Procedures for Implementing the Freedom of Information Act
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=22&FType=2

Handbook 6300.7/1—Procedures for Computer Matching Programs
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=29&FType=2

Directive 6500—Information Security Program
http:vaww1.va.gov/vapubs/viewPublication.asp?Pub_ID=50&FType=2

Directive 6502—Privacy Program
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=51&FType=2

Handbook 6502.2—Privacy Impact Assessment
http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=53&FType=2

Directive 6504—Restrictions on Transmission, Transportation, and Use of, and Access to VA Data Outside the VA Facilities
http://www1.va.gov/vapubs/

Directive 7100—Competitive Sourcing
http://www.va.gov/pubs/directives/Acquisition-and-Materiel-Management/7100dir.doc

VA Acquisition Regulations
http://www1.va.gov/oamm/oa/ars/policyreg/vaar/index.cfm

3. Federal Laws and Regulations.

The Government Performance and Results Act of 1993 (GPRA)
http://www.whitehouse.gov/omb/mgmt-gpra/gplaw2m.html

The Federal Managers Financial Integrity Act of 1982 (FMFIA)
http://www.whitehouse.gov/omb/financial/fmfia1982.html

Chief Financial Officers Act of 1990 (CFO Act)
http://govinfo.library.unt.edu/npr/library/misc/cfo.html

Federal Financial Management Improvement Act of 1996
http://www.whitehouse.gov/omb/financial/ffs_ffmia.html

The Energy Policy Act of 1992
http://www.usbr.gov/power/Legislation/epa92.pdf

The Government Paperwork Elimination Act (GPEA)
http://www.archives.gov/federal-register/laws/paperwork-reduction/

The Clinger-Cohen Act of 1996
http://www.cio.gov/Documents/it_management_reform_act_Feb_1996.html

The Federal Acquisition Streamlining Act of 1994, Title V (FASA V)
http://www.estrategy.gov/documents/FedAcqStrmlingAct1994pl103355.doc

The Federal Information Security Management Act (FISMA)
http://www.estrategy.gov/documents/FedAcqStrmlingAct1994pl103355.doc

The E-Government Act of 2002 (P.L. 107-347)
http://www.whitehouse.gov/omb/egov/g-4-act.html

The Rehabilitation Act (Section 508)
http://www.section508.gov/index.cfm?FuseAction=Content&ID=12

Federal Acquisitions Regulations
http://www.acquisition.gov/far/

Federal Information Processing Standards (FIPS)

http://www.itl.nist.gov/fipspubs/

National Institute of Standards and Technology (NIST)

http://www.nist.gov/

4. OMB Guides and References.

OMB Circular A-11—Preparation, Submission, and Execution of the Budget

http://www.whitehouse.gov/omb/circulars/a11/current_year/a11_toc.html

OMB Circular A-94—Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs

http://www.whitehouse.gov/omb/circulars/a094/a094.pdf

OMB Circular A-130—Management of Federal Information Resources

http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html

OMB Memorandum 05-23—Improving Information Technology Project Planning and Execution

http://www.whitehouse.gov/omb/memoranda/fy2005/m05-23.pdf

OMB Memorandum 04-24—Expanded Electronic Government President's Management Agenda Scorecard Cost, Schedule, and Performance Standard for Success

http://www.whitehouse.gov/omb/memoranda/fy04/m04-24.html

The President's Management Agenda

http://www.whitehouse.gov/omb/budget/fy2002/mgmt.pdf

Federal Enterprise Architecture Consolidated Reference Model Document

http://www.whitehouse.gov/omb/egov/documents/CRM.PDF

Capital Programming Guide

http://www.whitehouse.gov/omb/circulars/a11/current_year/part7.pdf

5. VA Plans, Guides, and References.

VA Strategic Plan FY 2003-2008
http://vaww1.va.gov/op3/page.cfm?pg=8

VA Technical Reference Model
http://www.va.gov/oirm/architecture/EA/2002/AppendixC-TRMV1.3.pdf

Integrated Baseline Review Toolkit
http://vaww.ppoe.oit.va.gov/PPOEOIT/docs/evms/IBRToolkitWeb_FC_10102006.pdf

VA Operational Analysis Guide
http://vaww.ppoe.oit.va.gov/docs/evms/OA_ICC_Guide113006.pdf

The Program Managers' Guide to the Integrated Baseline Review Process
http://vaww.ppoe.oit.va.gov/docs/evms/PMGuideIBRProcess10102006.pdf

VA IT Project Risk Management Process Guide
http://vaww.ppoe.oit.va.gov/docs/itpm/Risk_Management_Guide_Jan2008.pdf

VA IT Project Cost Estimation Process Guide
http://vaww.ppoe.oit.va.gov/docs/itpm/Cost_Estimate_Guide_Jan2008.pdf

Primavera® Standard Operating Procedures
http://vaww.ppoe.oit.va.gov/ITPM/PrimaveraSOPs.asp

Primavera® Earned Value Management User Guide
http://vaww.ppoe.oit.va.gov/docs/EVMS/EVMPrimaveraUserGuide012907.pdf

IT Portfolio Management Guide
http://vaww.ppoe.oit.va.gov/PPOEOIT/docs/evms/VA_IT_PfM_main_91604.pdf

Project Manager Certification Information

http://vaww.onevapmcertification.va.gov/

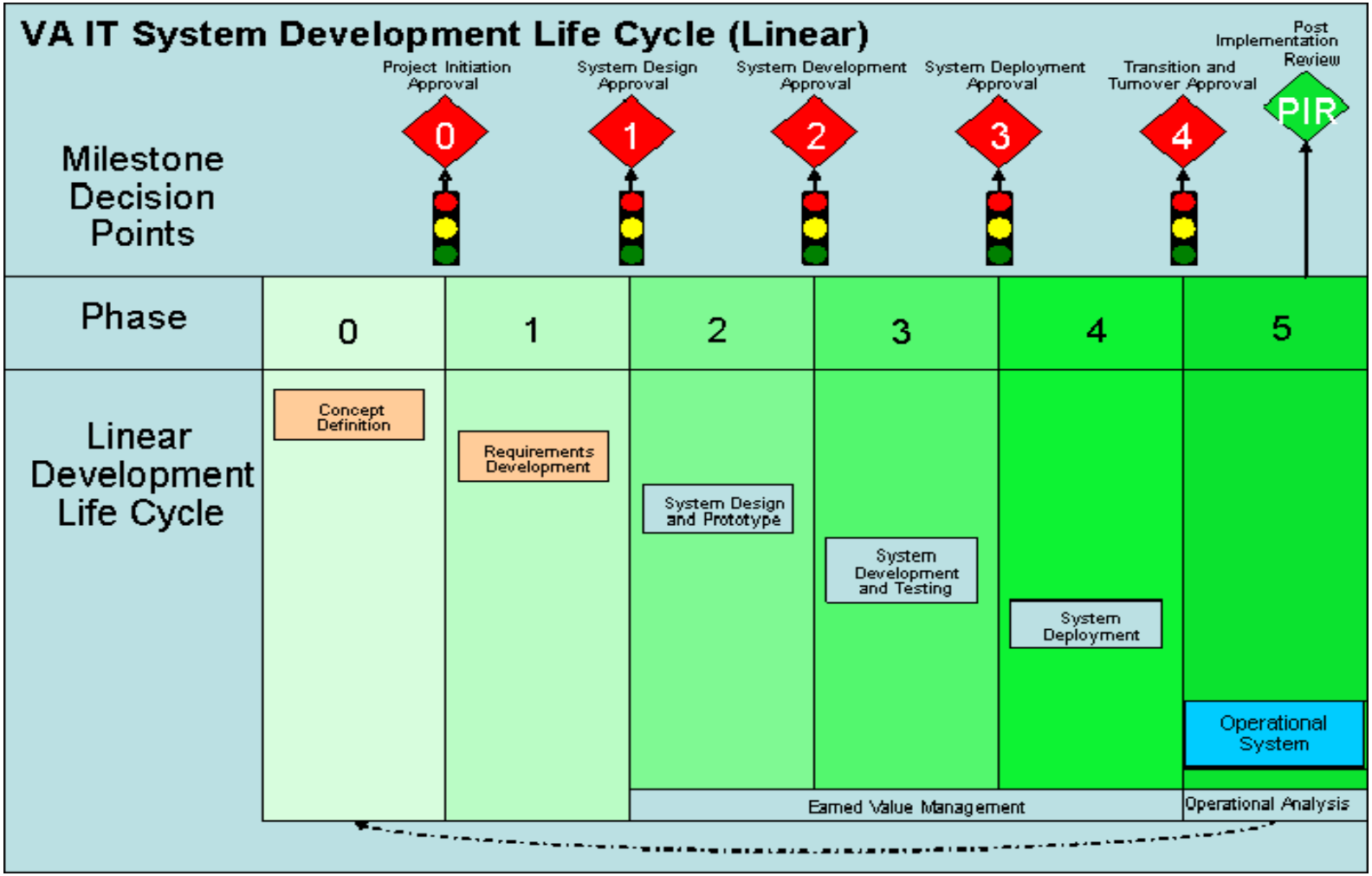
Capital Asset Management System Information

http://vaww.va.gov/oaem/CAM_Service_Pg/CAM.htm

VA Privacy Policy References

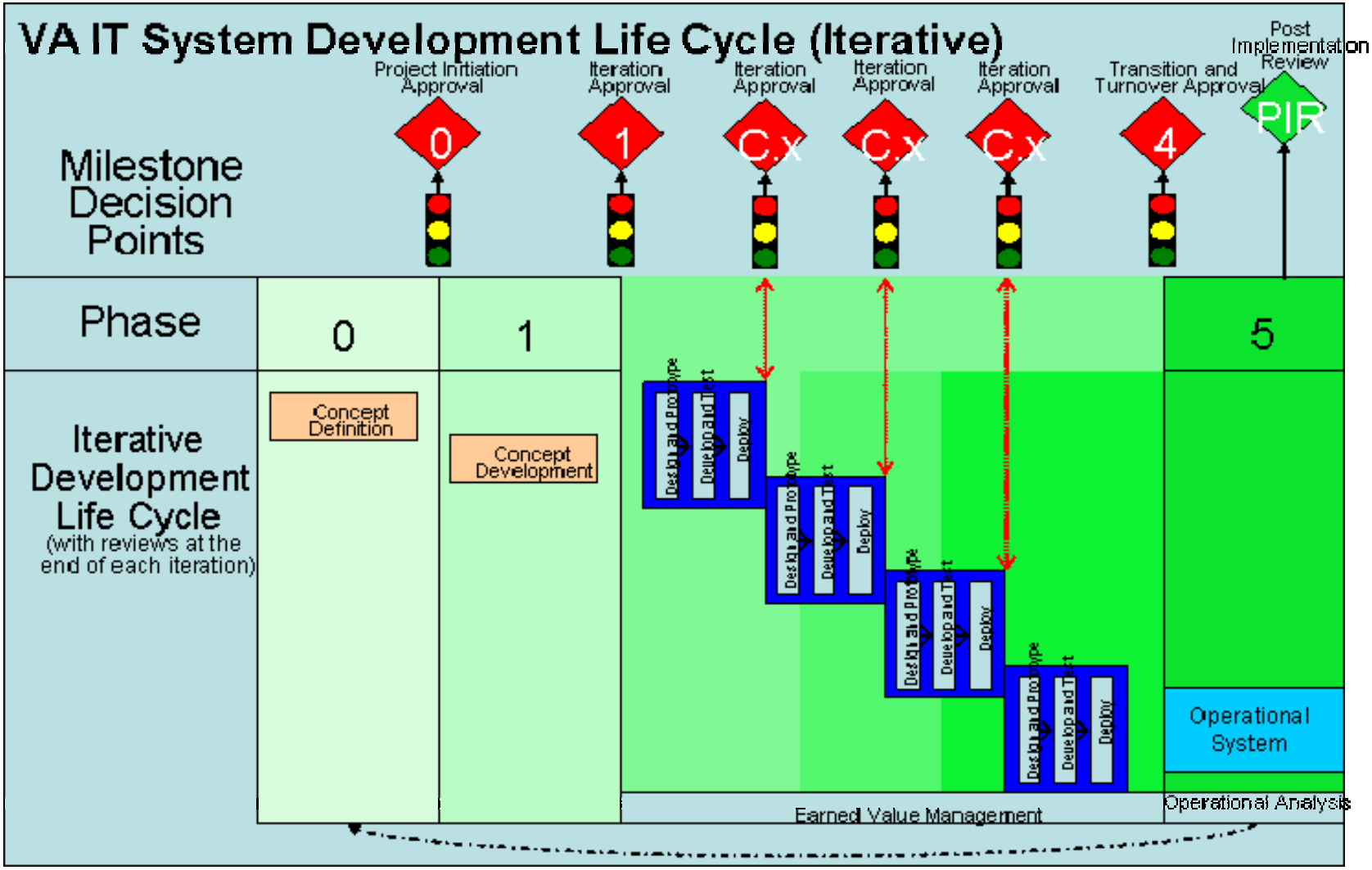
http://www.va.gov/privacy/

IT SYSTEM DEVELOPMENT LIFE CYCLE FRAMEWORK



Note: The Development, Modernization, or Enhancement (D/M/E) efforts on Operational Systems must enter at Phase 0.

Figure B-1: IT SYSTEM DEVELOPMENT LIFE CYCLE (LINEAR)



Note: The Development, Modernization, or Enhancement (D/M/E) efforts on Operational Systems must enter at Phase 0.

Figure B-2: IT SYSTEM DEVELOPMENT LIFE CYCLE (ITERATIVE)

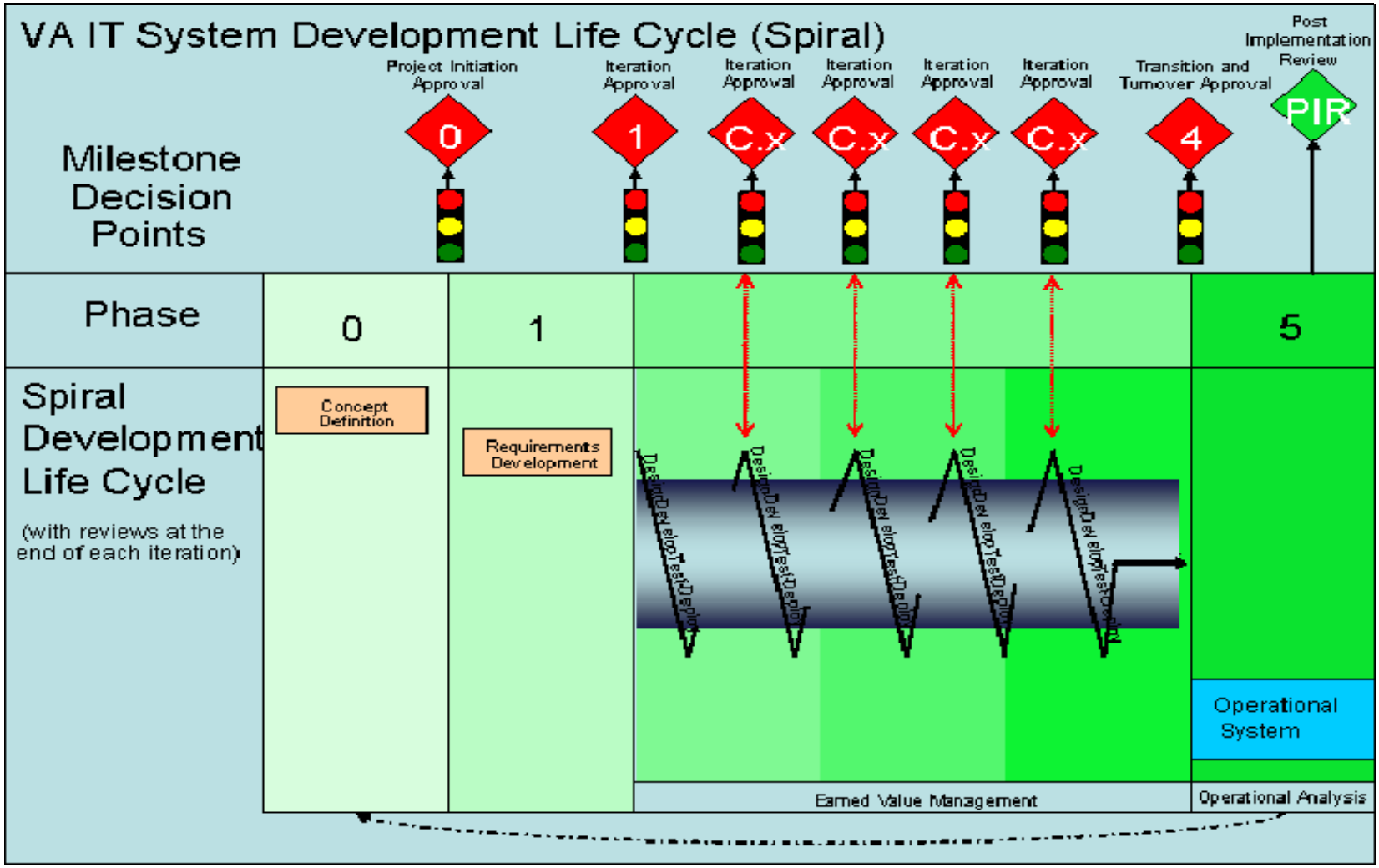


Figure B-3: IT SYSTEM DEVELOPMENT LIFE CYCLE (SPIRAL)